TREES MAGAZINE

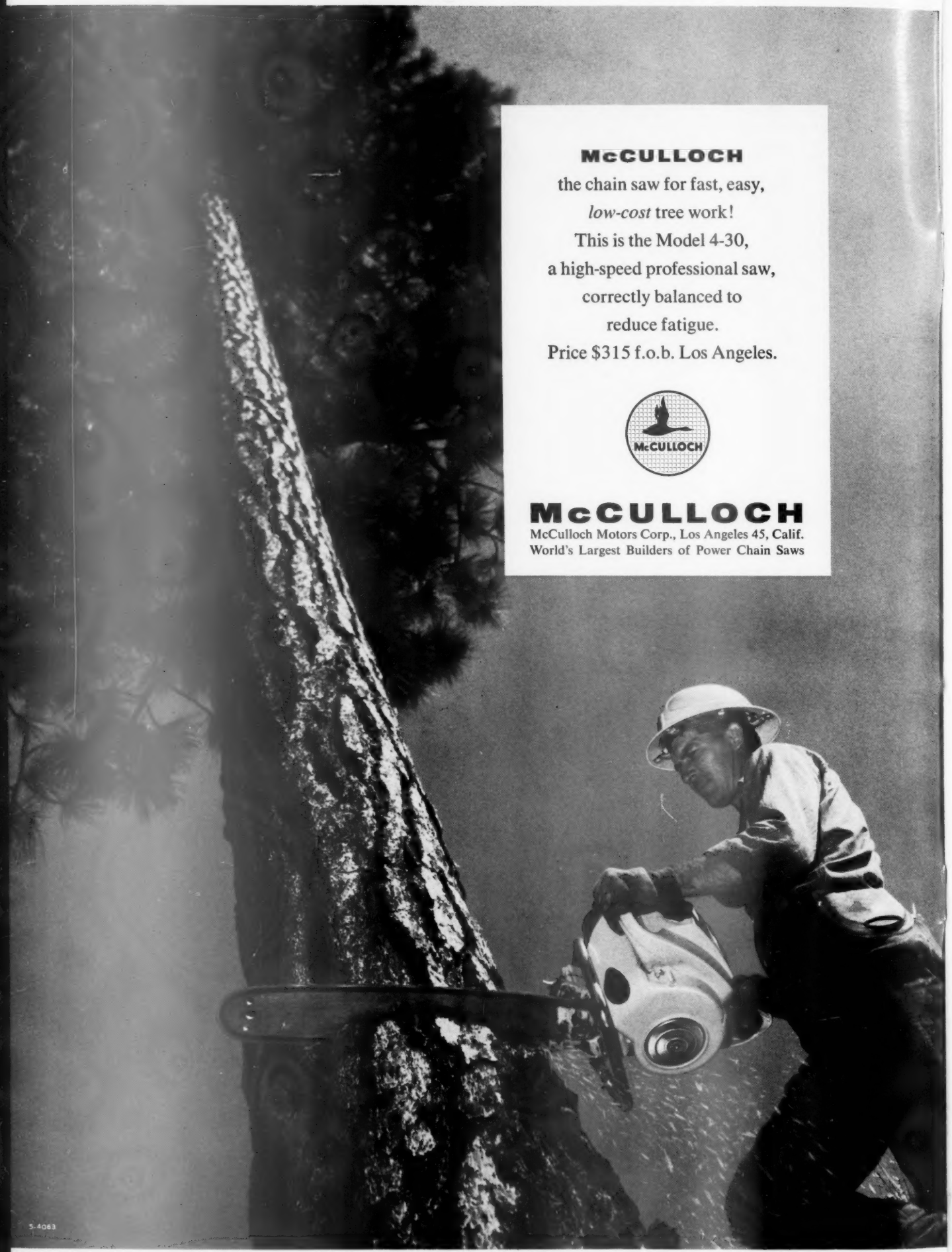
McCabe-Powers Sky Master in Action for Line Clearance Operation

Street Tree & Utility Conference–Wade Park Manor–Cleveland, Ohio, March 3 and 4

Developments In Mist Blower Spraying — **Clyde C. Hamilton**

The Junipero Serra Oak — **Harry Dutton**

January-February, 1955 — *The Journal of American Arboriculture* — Vol. 15. No. 2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ALONG THE WAY With .... EDW. SCANLON

■ Now we understand THAT THE SHANGRI-LA of ALL SAILORS has been given a DEFINITE EARTHY location—LOS ANGELES HAS BEEN SELECTED and will HEREAFTER be KNOWN AS "SMOG HARBOR."

■ **LOUIE CHADWICK considers it luck that NSTC business demanded HIS PRESENCE in SOUTHERN CALIFORNIA about the time OHIO STATE was playing U.S.C. IN THE ROSE BOWL—its SHEER GENIUS we says.**

■ J. L. WOLF OF KNOXVILLE has done it—AFTER 33 YEARS in the TREE BUSINESS he stepped on what APPEARED TO BE A GREEN LIMB—IT WASN'T — 15 feet — hospital — PELVIS BUSTED IN 3 PLACES. Moral is — YOU CAN'T EVEN TRUST A TREE!

■ **Also, LUCKY LOUIE THE CHAD ALSO met with a group of WESTERN N.S.T.C. boys in PALO ALTO and another group at SANTA BARBARA—so the trip wasn't a total loss. VAN VAN RENSSELAER, president of the WESTERN CHAPTER vouches for this.**

■ Got one of those new "I LOVE LUCY" streamlined STRATO STREAKS the other day. Sure is a NICE HEAP.

■ **How do YOU LIKE that BEAUTIFUL CENTER SPREAD of McCABE-POWERS on their GIRAFFE-NECKED SKINNING GIZMO—the proper botanical name is the SKY-MASTER. Quite a TIME SAVING MACHINE that is GOING OVER BIG.**

■ You will ALL BE SADDENED to learn of the SUDDEN PASSING of CHARLIE WOLF OF DETROIT. CHARLIE was ONE OF THE PILLARS of the SHADE TREE CONFERENCE and we'll all REALLY MISS his cheerful and FRIENDLY PERSONALITY at future meetings.

■ **GORDON KNOWLES the HELLER FOR GRO boy has MOVED AWAY from PIKES PEAK and has PITCHED HIS TEPEE in NEWTON SQUARE, PA—wherever that is.**

■ GODON AND RAY GUSTIN will be flinging HELLER TO GRO all over the WASHINGTON, D. C. FLOWER SHOW (Mar. 7-12) and the BERGEN COUNTY HOBBY AND GARDEN SHOW at TEANECK, March 12-19. Take a flyer on that stuff—IT'S GOOD.

■ **CAROL MARLOWE is, as of LAST APRIL 30, an EX-CITY FORESTER. He RESIGNED at DAYTON, OHIO—for better or worse—and is NOW ENGAGED in PRIVATE TREE WORK. Lots of luck.**

■ Spent a VERY PLEASANT WEEK-END with the WOOSTER TILFORDS Jan. 22-23. PAUL showed me AL MILLER'S BEAUTIFUL HOME and ESTATE, "THE TREES"—THE HARD WAY. The roads were icy and snowy. We WENT DOWN A HILL to the place —HAD TO GET A TOW TRUCK TO GET OUT—it was a wonderful relaxing week-end anyhow WITH A STEAK THE SIZE OF A HORSE to top it all off.

■ **IT IS SELDOM that the WORLD LOSES TWO IMMORTALS in one generation and we doubt if it has EVER LOST TWO SUCH MEN within several months. DR. LIBERTY HYDE BAILEY and DR. DAVID FAIRCHILD died in 1954. Each had reached an advanced age, during the entire length of which they had probably made MORE CONTRIBUTIONS TO HORTICULTURE than any other scientists of the past century. Their GREAT WORKS AND ACCOMPLISHMENTS have enriched us all thru their PRICELESS LITERARY AND RESEARCH CONTRIBUTIONS.**

■ The WESTERN CHAPTER of the N.S.T.C. is spreading out—LYN HARRISS reports that the CITY AND COUNTY OF HONOLULU HAS APPLIED for a SUSTAINING MEMBERSHIP in the Conference. Now wouldn't that be a LOVELY PLACE TO HOLD the 32nd National Shade Tree Conference —ALL THOSE IN FAVOR SAY "KAMEHAMEHA."

■ **LETS HOPE people will not GO OFF HALF COCKED on this matter of PLANTING STREET TREES INSIDE THE SIDEWALK—PERIOD. Keep in mind—IT IS ONLY ONE of a number of possibilities, and UNDER ABSOLUTELY NO CIRCUMSTANCES should it be THE LAW. That would be the WORST SETBACK that SCIENTIFIC TREE USE could sustain. If that's all the DEEPER PEOPLE CAN THINK on the subject they SHOULD LEAVE IT TO OTHERS.**

■ We have SOME NEW ADVERTISERS in this issue as you will see—we WOULD LIKE IT, and SO WOULD THEY if you would BUY THEIR PRODUCTS—they are all good and are NEEDED BADLY BY YOU lads in the field—otherwise they wouldn't be advertising. Insist on BUYING FROM THE ADVERTISERS IN TREES.

■ **Of course DON'T FORGET THE OLD RELIABLE ADVERTISERS—they stay there BECAUSE YOU BUY THEIR PRODUCTS—if WE COULD GET a lot MORE OF THE PEOPLE who SHOULD ADVERTISE in TREES we could PUT OUT A BIGGER MAGAZINE—so, LOWER THE BOOM.**

■ We've got a NEW OFFICE at SCANLON ENTERPRISES. A SNAPPY EX-CHICKEN COOP—covered the FEATHERS AND STUFF over with PECKY CYPRESS and LINOLEUM and PICTURES. It's KINDA NICE in spite of ITS CHICKEN BACKGROUND. So THIS IS THE FIRST ISSUE OF TREES to be made up under THESE SWANKY CONDITIONS—Jan. 29—late as usual.

■ **A late note from DON OBERT—now PARK DIRECTOR AT LONG BEACH, CALIF.—used to be just a plain old CITY FORESTER AT DALLAS (out of the frying pan etc.)—anyway DON IS LOOKING for a CITY FORESTER FOR LONG BEACH (they need one too)—the JOB PAYS FROM $439.00 to $537.00. Knowledge of WEST COAST TREES and PREVIOUS EXPERIENCE necessary. Appointment TO BE MADE BY APRIL FOOLS DAY—So Hurry.**

■ Now DON'T FORGET the ADVERTISERS FELLOWS—and give TREES a recommend TO OTHERS who SHOULD BE REPRESENTED.

■ **If YOU HAVEN'T SENT in your HOTEL RESERVATION YET for the STREET TREE AND UTILITY CONFERENCE better DO IT TODAY—to the WADE PARK MANOR, EAST 107TH CLEVELAND. See program on page 6. It's a meeting VERY UNIQUE and NONE SHOULD MISS IT—advance registration IS HEAVY.**

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TREES MAGAZINE
7621 Lewis Rd., Olmsted Falls, Ohio

The Editors of TREES invite discussions, comments and all types of literary materials pertaining to trees and tree preservation from any person engaged either in the scientific advancement or commercial development of the field.

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TREES Magazine is a bi-monthly Journal published at Olmsted Falls, Ohio, by Edward H. Scanlon, and is devoted to the furtherance of the technical and business administration of Trees (Street and Ornamental); Parks (Municipal and National); and Forests (State, National and Private), in the U. S. Scanlon Publishing Co., 7621 Lewis Rd., Olmsted Falls, Ohio. Subscription by mail $2 per year; outside United States, $2.50. Advertising rates upon inquiry. Closing date for advertising copy—10th of month preceding date of issue. Unsolicited manuscripts must be accompanied by return postage.

Jan.-Feb., 1955 **Journal of the National Arborist Association** Vol. 15, No. 2

EDWARD H. SCANLON, Editor
7621 Lewis Rd., Olmsted Falls, Ohio
ADams 5-2357

"No place is complete without trees. A home without trees is charmless; a road without trees is shadeless; a park without trees is purposeless; A COUNTRY WITHOUT TREES IS HOPELESS."

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Out On A Limb

QUIT KIDDING EVERYBODY ABOUT TREES

It's about time we took off the kid wig and grew up — specifically when it comes to telling, and selling, the public about trees. As a matter of fact the public is ready and waiting. They know the fallacies of the junky Silver maple, the Chinese elm and other worthless trees that have been pushed down their throats for years. They want good trees—beautiful and different ones. They are just waiting. They don't know what the good ones are, but when occasionally they are shown unusual and beautiful ones they snap them up. We know.

The great trouble is that most agencies who sell trees know too little about them. They do not know of the diseases and insects that affect them. They know nothing of the trees cultural needs, and they do not want to be bothered taking a few extra minutes trying to sell a good tree to a customer—but they will dally any length of time over a mess of shrubs. Trees are by far the most important part of a landscape job but strangely enough you can observe dozens of landscape jobs where a nice selection of shrubs have been used to find them topped with a couple of one of the four or five common run-of-the-mine trees that seem to be the extent of the species available.

The public of course wants fool-proof trees—no diseases, no insects, no mess, no surface roots, fast growing, and if possible, no leaves to rake up. Everyone knows that such an utopian arboreal miracle does not exist, so why not come out and sell people on beautiful trees even though there may be some insect problem that may require two or four sprays per season. People will spray roses "48" times a week to get a dozen roses a season from a bush so why can't they be sold a beautiful tree that would require far less maintenance. They can, but the plant merchants must become tree-minded.

Another thing that has been overplayed is the longevity of a tree. Why do people worry about using trees on their home grounds that have a life expectancy of a hundred years. Some permanent trees of this character are necessary and desirable, but should all trees be passed by because they do not possess the potential of hitting the century mark? Several lovely little trees that are comparatively short-lived come to mind. One is the flowering peach. Few trees are as breath-taking as these multi-colored little gems, yet what is their life span? Eight, ten, fifteen years, seldom longer. But if a person cannot derive untold joy and pleasure from these spectacular little gems in that time, and for the few dollars they cost, then he has absolutely no sense of values.

Strangely enough tho with the advent of the low ranch type house in the East the public got the jump on the tree sellers in their evaluation of the type of tree needed to compli-

ment these close-to-the-ground homes. They knew that big trees would fit like a pencil in a post hole, but they didn't know what species they wanted and when they asked their plant supplier they found him in the same boat. A little study of trees will disclose many very desirable and beautiful small growing species in many forms that can be grown, and will have to be, for the new trend in trees.

So quit kidding the people—quit selling them junk like the silver maple, Chinese elm and other such poor stuff. Tell them the truth about the afflictions and how they may overcome them. There isn't a single species that doesn't have some trouble or defect and we all know it.

Conn. Arborists Elect

Photo: Haydick Jr.—Bridgeport, Post-Telegram

New and retiring officers were caught in this picture taken at the 33rd annual meeting of the Connecticut Tree Protective Association on January 17, 1955.
Front Row: (Sitting) Left to right: Wesley Hall, Darien; Bill Kapouch, Darien; (squatting) Bill Vizduck, Bridgeport.
Middle Row: Left to right. (On arm of chair) Al Meserve, former President NSTC; Charlie Mitchell, United Illuminating Company, Bridgeport; Joe Fennell, D. B. Magruder, President Connecticut Tree Protective Association.
Rear Row: (Standing, left to right) Joe Dietrich, Greenwich, retiring President Conn. Tree Protective Association; Dr. Harold Perkins, University of Connecticut, Tim Janosko, Tree Warden, Stratford; Ed Connell, Supt. of Parks and Trees, Stamford; Dr. John C. Schread, Conn. Agric. Exp. Station; Dr. Al Dimond, Conn. Agric. Exp. Station, vice-president, C. T. P. A.

Dr. Carter Appointed

Urbana, Ill.—Appointment of Dr. J. C. Carter, plant pathologist of the Illinois Natural History Survey Division of the State Department of Registration and Education, to head the Survey's section of Applied Botany and Plant Pathology has just been announced by Dr. Harlow B. Mills, Chief. The appointment of Dr. Carter, which will become effective January 1, 1955, was made recently by the Board of Natural Resources and Conservation to fill the position left vacant by the death of Dr. Leo R. Tehon on October 17.

Dr J. C. Carter of Illinois

Dr. Carter joined the staff of the Natural History Survey in May, 1934, as an assistant botanist. He was later named associate botanist, and has held the position of plant pathologist since July, 1947.

A native of Indiana, Dr. Carter received his early education in Tippecanoe County schools and attended Purdue University. From that institution he received his bachelor's degree in 1928, his master's in 1932, and his doctorate in 1934. He was married in 1934 to Margaret Lucile Rogers of Crawfordsville, Indiana, who received her B. S. degree from Purdue in 1930. They have one son, Roger, now a freshman at the University of Illinois.

Before joining the Natural History Survey staff Dr. Carter taught vocational agriculture in an Indiana high school, 1928-30; was an assistant in plant pathology at Purdue University, 1931-34; and did special research on fungicides for the Crop Protection Institute at the University of Delaware during the summers of 1931 and 1932.

For his work on wetwood disease of elms Dr. Carter was awarded a special citation by the National Arborist's Association in 1945. His investigation, characterized as outstanding research on shade tree preservation, was reported in a bulletin published by the Illinois Natural History Survey in 1945.

Dr. Carter is the author of over 40 scientific articles on tree diseases, fungicides, and antibiotics. All have stemmed from his research interest in fungus, bacterial, and virus diseases of forest, shade, and ornamental trees and shrubs, especially oak wilt, Dutch elm disease, phloem necrosis, and elm wetwood.

He is a member of several scientific societies. He has been a member of the board of governors of the National Shade Tree Conference since 1951. Also he is a charter member of the Midwestern Chapter of the National Shade Tree Conference, was its vice-president in 1947, and its president in 1948.

MEETING DATES

Connecticut Arborists' Short Course, University of Connecticut, Storrs. February 16-17.

Midwestern Chapter, N.S.T.C., Chase Hotel, St. Louis. February 23-25.

Street Tree and Utility Conference, Wade Park Manor Hotel, Cleveland. March 3-4.

Western Chapter, N.S.T.C., Northern Section, University of California. Davis. March 5.

Michigan Forestry and Park Association, Kellogg Center, Michigan State College, East Lansing. March 18.

Massachusetts Tree Wardens, Arborists and Utilities Conference, University of Massachusetts, Amherst. March 28-April 1.

Southern Chapter, N.S.T.S., Hotel Washington, Washington, D. C. April 4-6.

31st National Shade Tree Conference Santa Barbara, California. August 1-5.

Splendid Program Is Ready For S

In presenting the final program for the Street Tree and Utility Conference a reiteration of the purpose and objectives of the conference would seem to be in order.

The conference which will be held in Cleveland at the Wade Park Manor March 3rd and 4th is co-sponsored by the Street Lighting Committee of the Illuminating Engineering Society, the Transmission and Distribution Committee of the Edison Electric Institute, and the Shade Tree Selection Committee of the National Shade Tree Conference. Contemporary problems involving pruning of existing trees or the clearing of rights of way will not be a part of the agenda. The conference will be confined to discussions for the establishment of long range planting and construction programs to assure that present day conflicts will not be repeated.

Honorable Thomas A. Burke, formerly United States Senator from Ohio.

Kirk M. Reid, Illuminating Engineering Society.

This marks the first real constructive effort that has been made to bring together the public service agencies who traditionally use the street and roadsides of the nation—and unfortunately, in the past, not to a very high degree of cooperation. The result has been a nationwide series of conflicts, that have resulted in some very expensive remedial measures. Improper selection of trees coupled with a lack of coordination in the construction of pole lines and the installation of street lighting systems has brought about the many conflicts that today render many of these public services far less effective and functional than was the intent in their placing.

Cooperation in the planning stage is the first real step desired for the long range plan while coordination is neces-

John W. Anderson, Edison Electric Institute.

WADE PARK MANOR
CLEVELAND, OHIO — MARCH 3-4, 1955

Final Program

Thursday, March 3rd—Main Ballroom

CHAIRMAN

JOHN W. ANDERSON, Edison Electric Institute

Why

A.M.

8:30—Registration

10:00—"Our Streets Can Be Beautiful—and Useful"
Honorable Thomas A. Burke, formerly Mayor of Cleveland; President, United States Conference of Mayors, and United States Senator from Ohio.

10:20—"1954 Hurricanes Pin-Point the Need for Long-Range Coordinated Programs"
John L. Rego, Director of Agriculture and Conservation, Providence, Rhode Island.

10:45—"The Aesthetic, Cultural and Historical Background of Streetside Tress"
Charles A. Young, Jr., City Forester, Baltimore, Md.

11:15—"Why Street Lighting"
David Baldwin, National Safety Council, Chicago, Ill.

11:45—"Why Overhead Lines"
G. E. Dean, Public Service Electric and Gas Co., Newark, N. J.

12:30—Lunch

AFTERNOON SESSION, MARCH 3rd

Design

P.M.

2:30—"Design of Street Lighting Standards—and Permissible Departures"
W. H. Edman, Holophane Co., Newark, Ohio.
H. W. Osborne, City of Buffalo, N. Y.

3:15—"Power Line Designs for Compatibility With Trees"
E. V. Sayles, Consumers Power Co., Jackson, Mich.

4:00—"Coordination of Telephone Lines With Street Tress"
Forrest Woodland, Plant Structure Engineer, American Telephone and Telegraph, New York, N. Y.

Street Tree and Utility Conference

4:30—"Subsurface Problems of Trees and Utility Structures"
Samuel S. Baxter, Commissioner, Department of Water, Philadelphia, Penna.

Adjourn

Evening Session and Banquet—Main Ballroom

7:00—Banquet

Street Tree and Utility Conference

CHAIRMAN

KIRK M. REID, Illuminating Engineering Society

8:30—"The Selection and Use of Trees To Minimize Public Area Conflicts"
Edward H. Scanlon, Consulting Arborist; Editor, TREES Magazine, Olmsted Falls, O.
Presentation of a "Recommended List of Street and Ornamental Tress"
Compiled by the Shade Tree Selection Committee of the National Shade Tree Conference, Edward H. Scanlon, Chairman.

FRIDAY MORNING SESSION—MARCH 4th—MAIN BALLROOM

CHAIRMAN

EDWARD H. SCANLON, National Shade Tree Conference

"Examples of Coordination"

A. M.

9:15—Street Lighting
Ray E. Dahlin, Southern California Edison Co., Los Angeles, Calif.
F. J. Schmitt, Rochester Gas and Electric Co., Rochester, N. Y.
Howard W. Bassett, Assistant Engineer, City of Brookline, Mass.
David A. Toenjes, General Electric Co., Nela Park, Cleveland, Ohio.

10:30—Pole Lines
Russ Hickok, Connecticut Light and Power Co., Berlin, Conn.
Geo. J. Vaupel, New Jersey Bell Telephone, Newark, N. J.
E. G. Stahl, Pacific Gas and Electric Co., San Francisco, Calif.
H. T. Sealy, Cleveland Electric Illuminating Co., Cleveland, O.

11:15—Recess

11:30—Street Trees
Joseph A. Sweeney, City Forester, Toledo, Ohio.
Walter I. Myers, Superintendent of Forestry, City of Detroit, Mich.
Geo. D. Blair, Director, Forestry Consulting Service, Jackson, Mich.
Jos. A. Dietrich, Superintendent of Trees, Greenwich, Conn.
Jacob Gerling, Bureau of Parks, Rochester, N. Y.

LUNCH

P.M.

2:30—Discussion Forum of All Speakers
(Questions from Floor on all Papers)

4:30—"Conference Summary—And the Next Steps"
Professor Harold O. Perkins, University of Connecticut, Storrs, Conn.

ADJOURN—SINE DIE

The registration fee for the Conference will be $12.50. This will include a copy of the printed and illustrated proceedings, and the Thursday night banquet and special session. Hotel Reservations may be made immediately if desired, and should be sent directly to the Wade Park Manor Hotel, East 107th St., Cleveland, Ohio. Mention in your letter that you are attending the STREET TREE AND UTILITY CONFERENCE. Extra copies of the Proceedings will cost $7.50 and orders should be sent, along with advance registration fees to Edward H. Scanlon, Co-chairman, Street Tree and Utility Conference, Olmsted Falls, Ohio.

sary in partial existing situations. In this spirit the proponents of this conference have worked together and have assembled a program of national authorities to delineate ways and means whereby these objectives may be reached.

The response to the conference, across the nation, has been extremely stimulating and it seems highly probable that effective steps of a constructive nature will result. The vigorous manner in which the public utilities have lent their support to this meeting has been duplicated by City Foresters and other public agency tree planters, and it is hoped that all arborists will participate in this progressive and educational effort to change what has been a very realistic approach to an important phase of city planning and public welfare.

While there are three major objectives to be presented in this conference, the fact that will hit closer to home for the arborist will undoubtedly be concerned with tree species and their use. The Shade Tree Selection Committee of the National Shade Tree Conference as a co-sponsor of the meeting is working on a list of trees, both new and old, which will be presented at the evening session on March 3rd.

Edward H. Scanlon, National Shade Tree Conference.

It is recognized by all persons involved in street tree management that the old practice of using four or five species, and all of them forest giant, fast growing, troublesome types, is a thing of the past and that sanity and science must guide street tree husbandry in the future.

John L. Rego, Director of Agriculture and Conservation, State of Rhode Island.

The complex problem of placing trees along streets to impart beauty, and shade where necessary, and at the same time reduce conflicts to an absolute minimum cannot be effected thru the use of four or five, two dozen or even five dozen species. It is a complex problem, involving many combinations of numerous site factors, and a scientific solution to these problems requires many tools—trees—of various shapes, form, texture and maximum size. While the whole country is involved and vitally concerned with suitable recommended trees, the committee will not attempt at this time, to present a comprehensive list covering all parts of the country. Rather the list will be general, but even so each tree involved will have to be studied at the local level on the basis of its behavior there before it should be used. A list of trees is not a static thing like a bin of nuts and bolts, and only persons skilled in their use can evaluate them and select wisely.

Reservations for the conference should be made directly with the Wade Park Manor, E. 107th St., Cleveland, Ohio. Registration fee of $12.50 should be sent to Edward H. Scanlon, 7621 Lewis Rd., Olmsted Falls, Ohio.

Trees...

Developments in Mist Blower Spraying

By Clyde C. Hamilton
Associate Research Specialist in Entomology Rutgers University

Before attempting to discuss some of the developments in mist blower spraying it might be well to discuss the mist blower and some of its essential features. What it is and how it differs from other equipment used for the application of spray materials. This discussion will cover only some of the essential features.

A mist blower may be defined as a spraying machine which produces a relatively large volume or blast of air traveling at a high speed into which is introduced a concentrated insecticide, fungicide or other material, resulting in a fine mist or spray which is carried to its point of application by the air stream. Mist blowers may be of many kinds, sizes and models, with many of the above mentioned factors varying considerably. A discussion of these factors follows:

Air volume. The air volume may vary from a few hundred cubic feet per minute in some of the recently developed home garden mist blower type of machines to 1,000 cubic feet in the better wheelbarrow type and on to as much as 30,000 cubic feet per minute in some of the larger mist blowers. It is questionable how effective some of these smaller home garden mist blowers are going to be which have a small volume and relative little air speed.

Air speed. The air speed in the commercial mist blowers may vary from 90 to 150 miles per hour and in some of the wheelbarrow type may be as much as 250 miles per hour at the end of the nozzle. Air volume and air speed usually vary inversely with each other i.e. the large volume of the Bean Rotomist, 28,000 to 30,000 cubic feet of air per minute, will give good carrying distance at 90 miles per hour. While others such as Olivers Iron Age and Hardies Lawrence mist blowers with air volumes of approximately 10,000 and 8,000 respectively, depend on air speeds of 125 and 150 miles per hour to get distance. The factors which determine the air volume and speed is an economic one and is closely related to the uses for which the equipment is intended.

Spray nozzles. Spray nozzles may be of almost any kind as long as they produce a satisfactory volume and particle size of mist spray. They may be placed in the center of the air stream at the opening of the hood or they may be arranged around the outside of the hood so that the spray is directed into the air stream. In no instance should the spray nozzles be large enough or so placed as to seriously interfere with the air blast. The kind and arrangement of the spray nozzles and the method in which the spray is introduced into the air stream has an important bearing upon the kind of spray produced and the distance to which it may be carried by the air stream. Introduction of the spray material into the center of the air stream and the use of larger size spray particles usually gives greater distance than when the spray material is introduced into the outer edge of the air stream and when the spray particles are relatively smaller. The spray nozzles should be free from clogging, having a screen in the nozzle or in the feed line to the nozzle, they should be capable of quick changing of the size of the opening in the spray disk and they should be hardened so they will not wear out quickly when suspended materials such as wettable powders are used.

The spray pattern, particularly with respect to the distance it will carry and its width, is a matter of the arrangement of the spray hood at the point where the air leaves the hood. A broad whirling pattern can be obtained by putting four or more "fins" arranged so as to give a whirling motion to the air. This is very effective for shrubbery and other plants where the distance is not more than 25 feet.

Pressure pump. The pump for producing pressure on the spray material may be of several types such as gear type pumps, roller type pumps and piston type pumps. The piston type pump is being used more today than when mist blowers were first developed. They give higher pressure up to 300 to 500 pounds, do not give much trouble with suspended materials and usually have a volume of three to eight gallons per minute. Gear type pumps are usually used at pressures between 50 and 100 pounds, have relatively larger volumes per minute, but will not break up the spray material as the higher pressure piston type pumps, and frequently give trouble with suspended materials, cutting out the gears with a resulting loss in pressure and trouble in priming the pump.

Size of spray tank. This will vary with the size of the spraying equipment i.e. whether it is a large or small unit. However one of the factors governing the size of the spray tank is the concentration of the spray material and the quantity used per unit of application. When mist blowers were first developed there was a tendency to use highly concentrated sprays and relatively less quantity, one to two quarts per tree. This permitted smaller size spray tanks, say 50 gallons for many of the larger mist blowers. Now the tendency is to use less concentrated spray materials and apply several times as much per tree. The frequency with which the spray tank must be refilled and the weight of the spray materials are important points to be considered.

Particle size. The particle size of the concentrated spray will vary with the pressure produced by the spray pump, the size of the opening in the spray nozzle and the shearing action of the air stream as it strikes the spray coming from the nozzle. In general the smaller the opening in the nozzle, the greater the pressure and the greater the shearing action of the air stream, the smaller the particle size. If the particles are too small they may not carry satisfactorily and may not impinge on the surface to be sprayed with sufficient force to give good wetting and a good deposit.

To some extent the kind of insect to be controlled will determine the kind of deposit required and the particle size required to give this deposit. For example, if one is spraying for cankerworm larvae which are relatively large, move about on the leaf surface and feed by consuming portions of the leaf, a smaller total deposit and less complete coverage will give control than if one is spraying for spider mites and their eggs which do not move about and require complete coverage of the infested surface. Scale insects will require more complete coverage than spider mites since in some instances it is necessary to drench the surface to permit the spray to soak thru encrusted infestations. Pine sawfly larvae may be controlled by spraying one gallon of spray containing one pound of DDT to the gallon per acre while this same quantity of dormant oil spray applied per acre no matter how strong, will not kill spider mites or scale insects.

Kinds and concentrations of spray materials. Almost all insecticides and miticides and many kinds of fungicides have been used in mist blowers. Some success has also been obtained in applying liquid foliar fertilizers and corrective materials for chlorosis etc. The insecticide applications have not been limited to plants but mist blowers have been used for mosquito control, pests around garbage dumps and many other places where a thorough application is desired in a short time. I have successfully used most of the old and newer types of insecticides and miticides on nursery plants and many shade trees at concentrations ranging up to 10 or more times the concentrations used in hydraulic sprayers.

Left: An Oliver 125 Iron Age Mist Sprayer in Action. Right: The New John Bean ROTOMIST "75"—a recent development in mist equipment.

The concentrations have to some extent been determined by the phytotoxicity of the materials to plants, the type of insect to be controlled and the quantity required to give a good distribution. For example, I have used Vapotone XX, containing 50 per cent active ingredients at dilutions of 1 to 100 in the mist blower for control of plant lice and spider mites on trees, where it would be used in a hydraulic sprayer at a dilution of ½ pint to 100 gallons of water or a dilution of 1 to 1600. In the mist blower you should get good kill with two quarts of the material per tree while with the hydraulic sprayer the same tree would require 15 to 20 gallons or approximately twice as much as the actual insecticide. On the other hand, I have used two and four per cent superior type dormant oil sprays in mist blower obtaining good wetting of dormant oak trees, 35 to 40 feet tall with as little as three gallons per tree. In this dormant oil spraying 2, 3/64 and 2, 5/64 diameter spray nozzles were used at a pressure of 350 pounds giving a volume of approximately four gallons of spray per minute. This would have been entirely too much volume per minute and too large size drop particles for the Vapotone XX spray to control the plant lice. DDT emulsion sprays are recommended as a prefoliar mist blower spray for control of the European elm leaf beetle at 12½ per cent concentration or one pound of DDT per gallon of diluted spray and at a six per cent DDT or ½ pound of DDT per gallon as a foliar spray against the same insect. Many operators will use a five percent DDT emulsion and apply two or three quarts to a good size tree for control of cankerworms, other leaf eating caterpillars, Japanese beetles, etc. I prefer to use a one per cent DDT and use one or 1½ gallons for the same size tree. This quantity will give good foliage coverage for leaf eating insects and is strong enough to deposit plenty of the toxicant. This is a case where a larger spray tank is desirable. A volume of at least two gallons of spray per minute will give good coverage and sufficient quantity to produce excellent control.

I wish now to give some examples of mist blower spraying which I have done in the control of various kinds of plant pests. These examples will show the versatility of the mist blower and some of the insecticides and miticides which I have used. The use and adaptability of the machine will be stressed, rather than giving data to show the per cent control at different concentrations.

Control of the Tuliptree Scale

The tuliptree scale, *Toumeyella liriodendri* (Gmel.) was a serious pest in New Jersey during the period from 1948 to 1952 at which time parasites and predators became abundant enough to bring it under natural control. The insect passes the winter as first instar nymphs, about ⅛ inch long, grow rapidly in the spring and summer and by late June and July they become quite noticeable because of the large quantities of honeydew they excrete. This sweetish, stickylike liquid attracts bees, wasps, flies and other insects. Growth is completed by August and young are produced in late September, October and I have noticed the crawlers as late as November 6. Unfortunately there is no satisfactory control for this scale insect during the time it is most noticeable, i.e. during the months of July and August.

A heavy infestation of this scale insect was located at the State Reformatory farm at Annandale the summer of 1950. Forty trees varying from 25 to 35 feet in height were sprayed October 3, using the A. B. Farquhar Iron Age mist blower. Four No. 3 whirl jet spray system nozzles were used at a pressure of 55 pounds. The spray mixture consisted of 10 gallons of a 25 per cent xylene type DDT emulsion, one gallon of Halco Chemical Co. rotenone spray, made up to 125 gallons of water. The diluted spray contained 2.0 per cent DDT and 0.008 per cent rotenone plus some other active ingredients. The foliage was quite dense and it was estimated that approximately 85 per cent of the young scales had been produced by the female scales at the time of spraying. About 80 gallons of the spray was used on the 40 trees or an average of two gallons per tree. The foliage was dense but good wetting was obtained.

Twigs collected and examined October 18 showed that there were still a few live young scales being produced by the females. The kill of young scales was very high on the older part of the twigs. However, on the terminal six to eight inches of new growth there was probably no more than 50 per cent kill. The kill of all young scales was estimated at between 85 and 90 per cent. The recovery of the trees from the scale infestation the following year was very good.

Dormant spraying at Hammonton. The city of Hammonton has approximately 1200 sycamore trees on its streets which are about 60 years old and vary up to 85 or 90 feet in height. These trees were heavily infested with the tuliptree scale from about 1948 to 1952. The trees are so large that spraying with a hydraulic sprayer would have been very

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Trees...

The Junipero Serra Oak

By Harry Dutton

On December 16, 1602, a Spanish explorer, Sebastian Vizcaino, entered the Bay of Monterey, California. Going upon shore the soldiers and sailors ate and luxuriated beneath the shade of a large oak, the branches of which were "washed by the salt sea spray."

There is no record of a visitation to this bay by any other explorers until May 24th, 1770, when an overland expedition led by Portola from the San Diego Mission arrived a few days in advance of Padre Junipero Serra, who arrived aboard the San Antonio on May 31st.

On June 3rd, the land party, and all those aboard the San Antonio, repaired to this oak and conducted an extended religious ceremony, as well as taking official possession of the land.

In the year 1870, June 3rd, the "100th Year" celebration was held under *an* oak located near the present Presidio Gateway. As this location was quite some distance from the sea shore, the historian, H. H. Bancroft, questioned the authenticity of the oak. He stated (Bancroft, Vol. XVIII, pg. 169, footnote 6) that David Spence, an old resident, said the Serra Oak fell into the sea in 1837 or 1838.

In 1903 (one writer says 1905), about 10 or 12 feet of the stump, the tree having died, was set up in a concrete base behind the Royal Chapel in Monterey, along with an attached sign.

All of the large oaks about Monterey are "Live Oaks," called by the botanists, QUERCUS AGRIFOLIA. They were first collected in the year 1791 by the famous Malaspina Expedition, which spent some time at Monterey. No Quercus Lobata—The Field or Roble Oak were ever collected there.

As far as I know, all botanists are agreed that the Serra Oak was a LIVE OAK, or ENCINA—Quercus Agrifolia. I mention this, because the records show that the Roble Oak lives longer than the ENCINA Oak.

In Dr. W. L. Jepson's Silva of California, Vol. II, pg. 57, he gives the extreme age of 275 as applying to an Encina Oak, but on page 227, he states the *average age of adults* as 100-150 years.

The largest known Roble, or Field Oak, in California, fell on December 7, 1952. It was called "El Roble Grande" and had a diameter 4½ feet above the base of 110 inches. The rings were carefully counted by the Farm Advisor of Lake County and its age was about 335 years. The trunk may be found at the Lake County Fair Grounds at this writing.

Now let's go back to the year 1770 when Sebastian Vizcaino and his crew landed in Monterey and all of them enthused over the size of the "Giant" Oak, under which they gathered to celebrate. To have been of a size to adduce so much praise, the tree surely was well over a 100 years old, say its birth was 1500. At the "100th year" celebration on June 3, 1870, the tree would be 370 years old! I have been unable to find any authentic record of a "Live" Oak living to an age approaching this figure.

The very definite conclusion is that the oak under which the "100 year" celebration was held, and which is now behind the Royal Chapel, certainly was not the oak concerning which Sebastian Vizcaino sent such glowing reports, nor the oak under which Padre Junipero Serra said Mass away back in 1770.

New Uses For Mist Type Tree Sprayers

By William B. Love

Extension Specialist in Municipal Forestry and Parks, Michigan State College, East Lansing

Burt D. Ferris, Superintendent of Grounds at Michigan State College, East Lansing, Michigan has found a new use for the mist blower sprayer originally purchased to spray the campus trees.

The versatility of the machine was proven when Ferris made use of the 120 mile per hour blast of air to blow leaves into piles or windrows. The machine is especially useful in clearing leaves from under shrubs and low hanging branches where it is difficult to rake.

Once the leaves are piled it is a relatively simple matter to load them into trucks. For loading the grounds men use either a mechanical hoist and packer, or a suction machine designed by Bill Williams, mechanic for the City of East Lansing. All leaves are saved and composted for use in mulching the ornamental plantings around the campus.

Ferris says that the mist blower is a real labor and time saver since it is possible to clear fallen leaves from the main campus area in two days. Operator Herman Feyerabend says that with this machine he can clear about a fifty acre area in an eight-hour day. It is estimated that two men, a driver and an operator, can accomplish what formerly required a crew of twenty to thirty men.

Ferris expects the machine to prove equally efficient in removing loose snow from the campus walks, drives, and parking areas this winter.

Municipal Spraying Made Economical With the New, Compact Rotomist "75"

Cities and towns, recreation areas, parks and campuses can now have effective shade-tree and fly and mosquito control at lower cost than ever before possible. The new John Bean Rotomist "75" puts high "rate of work" capacity in a compact, easily handled unit—delivers 19,000 cubic feet of air per minute to put more spray where it's needed in a day's time. Because of the faster spraying made possible and because accurate control of the spray discharge cuts waste to a minimum, both labor and spray materials costs are reduced significantly.

Spray is delivered to the Rotomist's whirl-mist nozzle by a completely enclosed, two-cylinder, plunger-type pump —the famous John Bean Rovalette with sapphire-hard, life-time cylinders. Pump and fan are powered by a 25-H.P. engine and the unit has a 75-gallon spray tank. An exclusive right-angle gear transmission is fully enclosed and oil-bath lubricated — another feature that contributes to the Rotomist's trouble-free operation and low cost of maintenance.

The Rotomist's true high pressure spray delivery at 400 PSI, axial flow fan and exclusive, straight-through air flow provide thorough coverage at heights up to 100 feet and complete penetration of dense foliage. The unit rotates through a full 360-degree circle and the discharge head pivots through a 110-degree arc from vertical to 20 degrees below horizontal. Control of rotation and pivoting is smooth and easy for the operator because of perfect counter balancing. Engine and spray controls are conviently located. The compact rotating section of the Rotomist requires only a 46" turning radius. The sprayer is available both in a trailer-mounted model (illustrated) with a weight of only 2260 pounds, or in a truck-mounted model. The latter mounts on any flat-bed truck and weighs only 1800 pounds.

Tree Aristocrats—Investments in Lasting Beauty

By Edward H. Scanlon
Formerly Commissioner of Shade Trees, City of Cleveland

Originally published in the paper of the Ohio Association of Cemetery Superintendents—March, 1953

While man's too well known inhumanity to man is manifested in many ways, and while many cemetery superintendents will disagree with me on the amount of vandalism that takes place in cemeteries, it would seem that here where few do not have loved ones at rest, man's vandalistic inhumanity should be low. Certainly it must be lower than in public parks, where it is disgracefully high, and even in botanic gardens or arboreta. Under such a circumstances cemeteries should offer the most nearly perfect place for the display of rare, flowering, unusual and majestic trees. Is there a better place for trees to survive the perilous four or five years after they are set out, when vandals or thoughtless people can easily destroy or maim the fragile young trunks and tops. I can think of none.

With many thousands of cemeteries that grace every town, village and city throughout the country, a glorious opportunity is presented to display everlastingly in these gardens of the departed, a royal presentation of trees for the edification and education of the living.

There is need also for a cemetery to make itself known to the public and certainly it is doubtful if even the most macabre of publicists would try to attract people by calling attention to the beauty of the headstones, the rare quality of the stone used in their construction, or even the delicacy with which the artisan had chiseled the various inscriptions upon them. Calling attention to the beautifully manicured lawns would have some, but not too lasting an appeal —lawns, even beautiful ones, are rather commonplace.

Flower beds and properly appointed shrub borders and banks lend dignity, color and character to any public area and most certainly to a cemetery. But even these necessary features have little lasting appeal. They lack the majesty, color and individuality that only trees impart to the areas they grave with their loveliness and vitality, as the most respected and highest order of plant lift.

I have always thought that people who manage cemeteries have the finest opportunity of any who plant trees, to indulge in tree use to its highest degree. (That is, interpreting the word use, the use of trees in spacious areas with a high maintenance quotient—as contrasted with tree use in an area where maintenance would be low or entirely lacking.) These are institutions with no foreseeable end and therefore, the use of fast growing weed trees seems a horrible travesty. Of course there may be certain areas where some of the faster growing species may be needed, but they should be used and planned with extreme care and discretion. They should be used as the orchardist uses filler trees—for temporary use only, and when this purpose has been attained they should be removed. More durable long-lived trees should be placed judiciously so that when they have attained a useful size the fillers can be removed. Under no circumstance can we justify the use of such weed trees as Silver maple, Chinese elm, Catalpa, Carolina poplar and others. For fast growth, as a filler tree, a comparatively new variety is available. This is the *Fruitless* Mulberry (Morus alba var:). This tree has big glossy foliage, maple-like in shape, and generally is a splendid small tree for fast effect or shade. The so widely used and beautiful too, fastigiate forms of poplar, Bolleana, Simoni and Lombardy are on their way out unless some relief is discovered to halt the inroads of the deadly Dothichiza canker. This disease is cutting a deadly swath through the ornamental plantings in the east and middle west. With trees of fastigiate and upright habit of great practical and esthetic value in cemeteries it is interesting to note that within a year or two there will be available several entirely new selections of red maple (Acer rubrum). One of these, the "Armstrong" has been described and illustrated in TREES Magazine (Vol. 12, No. 1). It is a narrow tree of fastigiate habit (Lombardy-like). The other red maple is a beautiful tree, named the "Bowhall." It is not quite so narrow, or fastigiate, but rather tends to be somewhat more pyramidal. Its foliage is tighter and denser than the "Armstrong." This will offer a nice choice in the red maple series. Also in production are a fastigiate and pyramidal form of male Ginkgo (Ginkgo biloba). The fastigiate form is a very unusual one for the Ginkgo. Most upright forms in this species tend to be pyramidal, but of all forms observed by the writer this is the most unusual and most graceful. A good Sugar maple (Acer saccharum) column type and a vastly improved form of Norway maple (Acer plantanoides) are also in production. The Norway form is also a columnar form and does not have the scrawny and irregular growing habits of the present upright

(Continued on Page 12)

A magnificent specimen of the Weeping Beech (Fagus sylvatica pendula). This tree requires great space but should be in every park, cemetery and other large areas. There are purple and golden leaved varieties of this form.

Sophora Japonica In The Southwest

This Sophora Japonica described by the author is a fine well formed specimen of a species that should be more widely used in the southwest.

The Honey Locust (Gleditsia tricanthos inermis) is a looser, more open type of tree that is also a good tree for southwest conditions.

Dear Mr. Scanlon:

I have read with interest your reports in TREES about the advanced age that Sophora Japonica blooms and fruits in the N. E. portion of the country, also I have observed this fact myself in my travels in Ohio and New York.

This species blooms at a much earlier age in the drier regions of the Praire States or the Great Plains region as we call it. Enclosed is a photo (No. 1) of a Sophora 9 years of age, in it's second year of bloom. The blossoms were quite scant the first year but had a heavy crop of bloom when I took the picture this summer. This picture was taken in Hays, Kansas in the west central portion of the state. I had a report of another Sophora 25 miles north of Hays that bloomed at 7 years of age. I did not see this tree myself so cannot confirm this.

Photo No 2 is a seven-year-old Thornless Honey Locust on the same property in Hays, a truly finely developed Honey Locust.

George M. Fisher
Consulting Forester and Landscape Engineer
Tyler, Texas

Tree Aristocrats

(Continued from Page 11)

Norway, known in the trade as *erectum* or *pyramidalis*. Seldom does this present tree attain a nice form until it has attained considerable age. The new form is pleasing and ornamental from its beginning and will some day completely replace the present poor form.

It would be treason, in a discussion of upright trees, to pass over the lovely, dainty and graceful fastigiate European white birch (Betula pendula fastigiata). This tree no doubt is susceptible to the Bronze Birch Borer, but who cares—anyway a DDT spray in early June has been proven to control this pest. Why this beautiful thing has been overlooked will always be a dark mystery. Even, assuming you couldn't control the borer, if the trees have to be replaced every ten or fifteen, or twenty years, it would still be a priceless addition to any landscape. By all means use this delicate colorful tree for small accents.

To me the absolute aristocrats of the tree world are to be found as varieties of the European Beech (Fagus sylvatica). The long-lived majesty and dignity; colorful beauty and fascinating shapes and forms to be found in the varieties of this species make it without peer, in my opinion, in the tree world. In fact, one might ask "what is a cemetery without a collection of beech varieties?" The answer would be "rather forlorn." With the subject of upright trees fresh in our minds we have an upright beech that is priceless. (Fagus syl. fastigiata), this tree is also called the Dawyck Beech and is the best upright tree of them all.

Three of the most fascinating Beech forms, that look like a pile of water whipped by a strong wind and then petrified, are the weeping forms. These are *Fagus sylvatica pendula,* the green-

leaved weeping form—*Fagus sylvatica pendula purpurea,* the red-leaved weeper, and *Fagus sylvatica pendula aurea,* the new and very rare Golden-leaved weeper. What character these trees would give to any cemetery! Then there are the fern-leaf forms — the green-leaf (Fagus syl. asplenifolia) and the red-leaf (Fagus syl. Rohanni). A much improved variation of the popular purple-leaved *Rivers* variety is *Spaethi.* This is a much darker leaved tree, appearing at times and under certain lighting to be almost black. A variety known as *Zlatia* has yellow foliage in the spring gradually turning to green. While there are a number of others, the above are the outstanding, however, one other, probably the peer of them all is the Tricolor beech. Its leaves of pink, white and green, turning to a coppery bronze, make it one of the most spectacular and charming trees anyplace or anytime.

Upright trees seem to have taken over, but one more must be mentioned. It is the upright Golden elm (Ulmus carpinifolia Wredii). Pyramidal in form this tree with rich golden foliage all season is a true aristocrat. It is susceptible to Dutch elm disease, but the years of pleasure and color it will give before it is stricken, if ever, and it is a ten thousand to one shot it will never happen, will more than assure that it was a splendid investment in beauty.

The Phellodendrons would seem to be trees of an exotic character that merit a much wider use than they have heretofore enjoyed. Two species in particular are noteworthy, *Phellodendron lavallei* and *Amurense.* These species, commonly called Chinese Cork trees are broad round topped trees of nice dark compound foliage and a very interesting corky bark. They are extremely tolerant of poor atmospheric conditions.

We hear much about this and that tree as a replacement for the American elm, but how can you replace an elm with anything but an elm. Two trees however come within this classification and both are resistant to Dutch elm disease. First and most spectacular is the Japanese Keaki (Zelkova serrata). It is only a matter of time before this magnificent tree will attain the use it so richly deserves, and if every reader could see the beautiful specimens in a suburb of Cleveland (we have planted over 500 on Cleveland streets) they would start a riot. The Zelkova is fountain shaped, has bark resembling a beech and in the fall its elm-like foliage turns red, not brilliant, but much more interesting than the poor color of the American elm. This tree belongs to the elm family and we predict that once it becomes better known it will enjoy wide use in cemeteries, parks and on the streets. It was illustrated on the cover

(Continued on Page 18)

Wage War

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BLACK WALNUT, RHODODENDRON, MOUNTAIN LAUREL leaf spot
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ODD–I–TREES

The two-headed Washington Fan palm as it appeared in January, 1938.

This picture taken 12 years after the first, in 1950 shows the considerable growth made by this ODD-I-TREE. Never give up Ralph—and thanks.

Dear Ed:

A two-headed calf would be no novelty to anyone who has rubbed elbows with the corn belt for some time. But, in my long association with plants and roaming of our California deserts, I never have seen but one two-headed Washington fan palm. In January of 1938, I first discovered this phenomenon of Nature growing in a yard in Oakland, California, but obviously a Washington filifera of California desert heritage. At that time I photographed it and, later, sent you a print when you were publishing your short-lived series of "Oddi-trees" in TREES Magazine. Apparently you scorned it. Last month I checked on the palm again and found that it has doubled in size in the past 12 years.

The enclosed photographic prints tell the story. It seems to me that this case is sufficiently unique to merit attention and I would be interested to know if anyone else ever has encountered such a freak in this genus. What caused the bud to split I would not know. There are some palm species that produce multiple heads, originating from a single stem, but I never have seen anything of that sort in California except for the Phoenix species that produce offshoots, notably the edible date.

With all good wishes, Sincerely,
Ralph D. Cornell

Shade Tree Loss Seen Curbed by Annual Surveys

Tree watching has become much more than just a pleasant pastime for nature lovers and municipalities.

Periodic checks on the condition of community trees in parks and on streets mean much in saving the nation's shade and ornamental trees from insect enemies and diseases, such as Dutch elm.

More and more municipalities are becoming aware of the need for scientifically combatting tree enemies and are engaging city entomologists to curb arboreal depredations. Buffalo is one of the latest to have a scientist on its staff to help preserve its beautiful trees.

Smaller communities unable to afford a city entomologist can retain consulting arborists as they need them at nominal cost, says F. R. Lancaster, technical consultant of the Davey Tree Expert Co.

Annual surveys of park and street trees will reveal extent of damage, dangerous trees, suspicious symptoms of major arboreal maladies and encroachment of dangerous insects. In most smaller cities, towns or villages, the survey can be accomplished in two or three days, and at a cost of only a few cents a tree.

Such surveys reveal suspect trees outside known areas of infection, perhaps for such rampaging ills as Dutch elm disease.

However, the best-planned community programs will not be effective without the active support of private citizens. Home owners can help by recognizing the need for sanitation, removal and burning of dead, dying and fallen wood, and spraying, watering and feeding of trees.

Recognized tree care practices will provide better health and beauty for both private and city trees.

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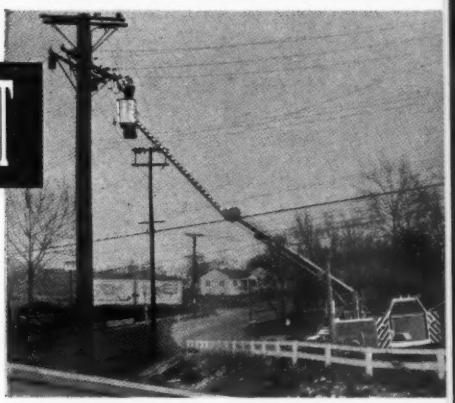
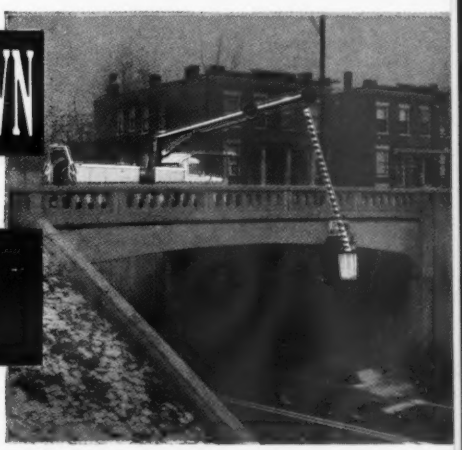


OUT

OVER



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For operator protection—insulation against 50,000 volts is provided on the outer beam . . . SKY-MASTER automatically locks in any position to which it is moved . . . hydraulic outriggers, on each side of the body, furnish absolute stability . . . constant flow of oil is maintained in cylinders at all times . . . and relief valves prevent overloading.

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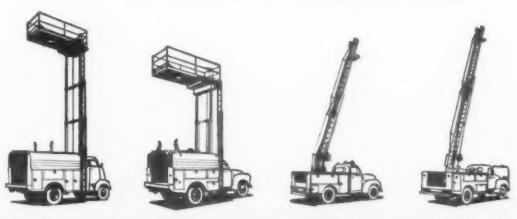

AMERICAN DIVISION
AUTO BODY COMPANY
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Tree Aristocrats

(Continued from Page 13)

of TREES Magazine (Vol. 12, No. 5) for August, 1952. The other Dutch elm disease resistant variety is the "Buisman" elm. It is also resistant to Phloem necrosis. The "Buisman" is a variety of the European Smoothleaf elm (Ulmus carpinifolia) and is a handsome, glossy leaved, broadly pyramided shaped tree. It never becomes too large.

Other trees that should be sought for their character, rarity and beauty are the Chinese Scholar tree (Sophora japonica), white flowers in late August or September; the Goldenrain (Kolereuteria paniculata) for its yellow flowers in July; the red flowering horse chestnut (Aesculus carnea briotti), and its double flowering (fruitless) cousin *Aesculus hippocastanum Baumanii.* The Callery pear (Pyrus calleryana) is a beautiful thing in bloom and in its plum colored fall dress.

Two small Asiatic maples cannot be overlooked. *Acer griseum,* the Cherry-bark maple, is magnificent the year round. In fall it is a blazing red and its birch-like, curling bronze red bark is spectacular at all seasons. Davids Striped bark maple (Acer Davidi is extremely decorative and unusual. The zebra-like black and green striped bark make this small tree (to 20 feet) a standout.

There are so many tree aristocrats that it is difficult to know which to mention and which to pass by. A beautiful little tree that has been seriously overlooked is the Idaho Locust. It bears heavily, in June, of rose-pink flowers—and again, lightly, in August. Used widely on streets in Cleveland they have excited much admiration and interest. Briefly I should like to recommend as outstanding the following Oaks—Shingle (Quercus imbricaria); scarlet (Quercus coccinea); willow (Quercus phellos), and Golden English (Quercus robur concordia). Do not stop planting Oaks

Officers Plant Propagators Society

New and retiring officers of the Plant Propagators Society are shown at the Society's fourth annual meeting in Cleveland in December 1954. Left to right: Edward H. Scanlon, newly elected Vice President and retiring Secretary-Treasurer; Dr. William E. Snyder, of Cornell University, new Secretary-Treasurer, and retiring President, Dr. L. C. Chadwick of Ohio State University. New President Richard L. Fillmore was unable to be present.

Roadside Management and Mismanagement

Photos: Courtesy, Baltimore Sun.

These two roads, both in Maryland, illustrate vividly how horrible signboards can mutilate the countryside—or in fact anyplace their ugly and repulsive forms are placed. Can't we leave just a little beauty? Send in any pictures of similar horror, we would like to run more. Thanks to Hollis Howe for these.

PLANT AMERICA—WISELY

because of the Oak Wilt bogey. It is not nearly as bad as it is being played up. The following Lindens deserve a place in your plans—they are gracious trees — Littleleaf (Tilia cordata); Crimea (Tilia euchlora); Japanese (Tilia Japonica), Silver); Tilia tomen tosa); and Silverpendent (Tilia petiolaris). Three outstanding Hawthorns are a must) Pauls double flowering scarlet (Crataegus oxyacantha Pauli); Washington (Crataegus phaenopyrum), and a too rare one, Lavalle (Crataegus Lavallei).

Regardless though, of what else may be done in a cemetery, special emphasis should be placed on the selection of trees. A wide selection of flowering crabs, Japanese cherries, red and pink Dogwoods, Chinese magnolias, red and white Redbuds, interspersed with the bigger aristocratic specimen trees, will serve as no other facility within your power, to create a friendly feeling in your community, and very favorable and worthwhile publicity far and wide that will attract thousands of people at all times of the year.

What does it matter how long it takes an outstanding and majestic tree to mature—they too, will be there forever.

A Nationwide Observance of Arbor Day

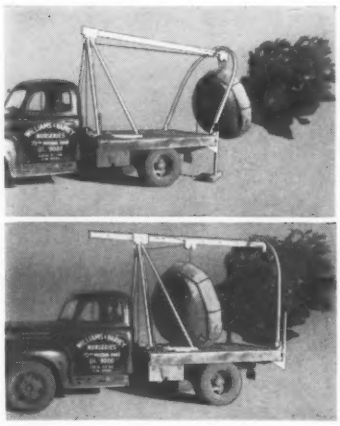
By Hollis Howe

Member,
National Arbor Day Committee
Baltimore, Md.

For a number of years, Mr. Edward Scanlon through his excellent magazine "Trees" sponsored the cause of a National Arbor Day. As a result of his effort, eleven states were induced, through the intervention of members of his selected committee, to adopt legislation designating the last Friday in April as National Arbor Day.

As the appointed member for Maryland, the writer was assured by former Governor William Preston Lane, that he was in favor of such a movement but that his decision would be governed by the opinion of interested members of his State organization. As a result, while the bill passed in the legislature, it was vetoed by him, on the recommendation of the State Forester and Commissioner of Education. Whether they did not understand the objective of such an act or were just dubious about the idea of holding tree-planting exercises on the above

(Continued on Page 26)



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Olmsted Falls, Ohio

Mist Blower

(Continued from Page 9)

difficult and expensive. On the evening of November 9, 1950 a conference was held with members of the City Commission and the City Shade Tree Commission. A demonstration was made the morning of November 10 at which time five gallons of Orthol D was diluted to 100 gallons of water, giving approximately five per cent oil. The morning of November 10 was cold and somewhat windy and the spray which was applied with an Iron Age mist blower would not reach more than 40 feet in the air or about halfway to the top.

Twigs from the lower portion of the sprayed trees were collected and examined about the middle of January, 1951. It was estimated that 96 to 98 per cent of the young scales on twigs up to a height of 20 or 25 feet had been killed by the spraying. The Shade Tree Commission of Hammonton later purchased a Bean Rotomist sprayer and the Sycamore trees on the streets and many on private property were sprayed with the mist blower using the oil spray with excellent results.

Dormant spraying of holly. An infestation of a scale insect, *Aspidiotus* sp., on American holly was called to my attention in the summer of 1952. This scale insect was infesting American holly trees from 12 to 15 feet tall in a holly orchard in Southern New Jersey. The foliage and twigs on infested branches turned brown and died rather suddenly in July and August. The main stem of these branches showed a heavy encrustation of scales which were covered with a brownish or greenish like algea growth.

The trees in the main holly orchard, about 2,500 of them, were sprayed during the last week in March and the first week in April 1953 with a two per cent superior type dormant oil spray applied with a mist blower. Two No. three and two No. five whirl jet spray system nozzles were used, at a pressure of about 60 pounds, giving about four gallons of spray per minute. Four curved fins were on the inside of the spray hood giving the air a whirling motion as it emerged from the blower. This gave a spread of about six feet at about 10 to 12 feet from the end of the blower hood. The trees were planted 16 feet apart in rows 16 feet apart. The trees were sprayed by driving between two rows and spraying the trees on both sides. Then coming back in the adjacent row and spraying in a similar manner. Thus each tree was sprayed from opposite sides. A total of 2,800 gallons of diluted spray was applied to the 2,500 trees giving 1.1 gallons of spray per tree.

An examination of scales on one and two year old wood made on twigs collected April 22 showed essentially 100 per cent kill. The kill of scales on the older and encrusted infestations or the larger twigs or limbs was high but left enough live scales to reinfest trees during the late spring and summer.

The kill of the overwintering eggs of the Southern red mite, *Paratetranychus ilicis* McG., was very good. No additional sprays were needed on the oil sprayed trees until the first week in September. Smaller trees in adjacent rows, which did not have the dormant oil spray, required three aramite sprays during the summer and a fourth spray at the time the oil sprayed trees were treated the first week in September.

All the holly trees in this orchard, old and young were given a delayed dormant oil spray in late March and early April of 1954. A two per cent superior type oil was used and applied as before. About 1.25 gallons of spray was applied to each tree. The scale insect had been eliminated by the spraying in 1953 and the development of the twice-stabbed lady bird beetle, *Chilocorus stigma* Mulsant.

Approximately two acres of the Japanese holly, *Ilex crenata convexa* were sprayed April 7, 1954 in a nursery at Little Silver. A superior type dormant oil spray, Scalecide, was diluted five gallons to 125 gallons with water, giving a four per cent oil spray. The plants had a spread of 12 to 15 inches and were in rows 42 inches apart. They were in three different beds of 12, 12 and seven rows respectively. The rows were about 800 feet long. The plants were sprayed with the Iron Age mist blower, using five No. two nozzles on a ring outside the spray hood for the first bed and later five No. three nozzles for beds Nos. two and three. The pressure was 350 pounds giving approximately three and 4.5 gallons of spray per minute. The beds were sprayed from both sides About 60 gallons of spray was used per acre.

Twigs were collected and examined April 23. The kill was very good, better than 99 per cent except on some plants near the end of the rows which were protected by fallen leaves from maple trees along the road. On these plants the kill of the overwintering eggs was 98 to 99 per cent. The wetting and the control with the dormant oil spray applied with the mist blower was much better than could have been obtained by spraying with a hydraulic sprayer. Less material and less time was required with the mist blower.

Spraying with mist blower for control of European elm bark beetle. In the spring and summer of 1950 some spraying for control of the European elm bark beetle, *Scolytus multistriatus* (Marsh.)

(Continued on Page 22)

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Both wettable powders and emulsified liquids may be used. Constant mechanical agitation is provided by an efficient 5-gallon-per-minute pump. This pump may also be used with a hose and gun assembly to apply insecticides to inaccessible areas.

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(Continued from Page 20)

was done at Princeton University. This work was done in cooperation with Mr. Clark, in charge of the University grounds and Mr. H. J. Dodd, of the Bureau of Entomology and Plant Quarantine Laboratory at East Orange, New Jersey.

On April 27, 1950, 31 gallons of a xylene DDT emulsion, containing 2.9 pounds of DDT per gallon, was diluted with water to make 125 gallons of spray containing 7.5 per cent actual DDT. This was applied with an Iron Age mist blower. A total of 25 trees were sprayed using 80 gallons of spray or an average of approximately three gallons per tree. One of these trees was quite large and spreading and 12 to 15 gallons of spray were used on this one tree. The other trees averaged from 50 to 60 feet tall. The remaining 45 gallons of spray was used the next morning in spraying 15 trees.

A new batch of spray was made up using 43 gallons of xylene DDT emulsion containing 2.9 pounds of DDT per gallon. This was diluted to 125 gallons with water giving approximately one pound of DDT to each gallon of spray. Forty elm trees 60 to 70 feet tall were sprayed using 105 gallons of the spray or about 2.6 gallons per tree. This would give 2.6 pounds of DDT per tree.

A total of 80 elm trees were sprayed using 230 gallons of spray containing 200 pounds of DDT on an overall average of 2.5 pounds of DDT per tree for the prefoliar spray.

Mr. Dodd later collected twigs from some of the sprayed trees and subjected them to feeding tests with the elm bark beetle adults. He stated that the results from these feeding tests indicated a good coverage of the crotches of small twigs at the top of the trees where the beetles feed.

A summer or foliar spray for the European elm bark beetle was applied on July 21 and August 1, 1950. The spray mixture consisted of 20 gallons of a xylene DDT emulsion containing 3.0 pounds of DDT per gallon, 1¼ gallons of a summer type spray oil (no emulsifier) diluted to 125 gallons with water. The oil did not emulsify readily so one gallon of Triton X 100 was added to the diluted spray. This gave a satisfactory suspension of the oil and the DDT. The diluted spray contained six per cent or approximately ½ pound of DDT per gallon. A total of 56 trees, from 50 to 70 feet tall, were sprayed using 115 gallons of spray or an average of two gallons of spray per tree or one pound of actual DDT. Good coverage was obtained but no data on the effectiveness of the spray was obtained from Mr. Dodd.

Spraying at Florham Farms, Madison, New Jersey with mist blower. During the summer of 1948 approximately 300 pin oak trees at the Twombley Estate, Madison, New Jersey were sprayed by Mr. Henry F. Bosenberg in cooperation with myself for control of the pin oak sawfly, *Caliroa lineata* McG. A new Bean Rotomist sprayer was used to apply this spray. A 25 per cent xylene DDT emulsion was diluted one gallon to five gallons with water. 275 gallons of the five per cent DDT spray was used on approximately 300 trees varying from 45 to 60 feet tall. This is an average of slightly less than one gallon diluted spray per tree.

On July 12, 1949 the following materials were applied with a Farquhar Iron Age mist blower. Four No. two spray nozzles giving a solid cone of spray, and manufactured by the O. E. Linck Co., were used at a pressure of 55 to 60 pounds. The trees ranged from 50 to 70 feet in height.

Block No. 1. Four pounds of a 25 per cent parathion wettable powder were diluted in 50 gallons of water and 30 gallons were applied to 38 large trees. This is approximately ¾ gallon of spray per tree.

Block No. 2. Two pounds of a 50 per cent wettable chlordane powder were diluted in 30 gallons of water and applied to 36 large oak trees. This is slightly more than ¾ of a gallon of diluted spray per tree.

Block No. 3. Diluted 24 pounds of a 50 per cent wettable Marlate powder in 50 gallons of water and added eight ounces of O. E. Linck's wetting agent. Forty-five oak trees along the road and in a hay field were sprayed using 35 gallons of spray or approximately ¾ of a gallon of spray per tree.

A total of 119 trees were sprayed using 95 gallons of diluted spray. All sprays were safe on the foliage.

In late May and early June of 1950 the following sprays were applied with the Farquhar Iron Age mist blower. Four No. three whirl jet spray system nozzles were used at a pressure of 55 to 60 pounds.

No. 1. A 25 per cent xylene DDT emulsion was diluted one gallon to 25 gallons with water, giving a one per cent DDT emulsion. 160 trees were sprayed with 250 gallons of this diluted spray. The trees varied from 45 to 65 feet in height. Half of the trees were sprayed May 25 and the remainder May 31.

No. 2. Ten pounds of a 25 per cent wettable parathion powder were diluted in 125 gallons of water. 75 trees were sprayed with the 125 gallons of spray or an average of 1.75 gallons of spray per tree. The trees averaged from 50 to 60 feet tall. Trees sprayed May 31.

No. 3. On June 2, 20 pounds of a 50 per cent wettable methoxychlor (Marlate) powder plus three ounces of Grasselli Spreader and Sticker were diluted in 125 gallons of water. Sixty large oaks and hickory trees along the road and in a pasture were sprayed with the 125 gallons of spray. The trees were tall and large averaging 60 to 75 feet in height. There was an average of two gallons of spray per tree and 68 minutes of spraying time was required to spray the 60 trees or slightly more than one minute per tree.

No. 4. Five gallons of a 25 per cent Rothane emulsion were diluted to 125 gallons with water giving a one per cent Rothane or DDT content. Seventy-five trees sprayed June 2 with the 125 gallons of diluted spray. This is an average of 1⅔ gallons of diluted spray per tree. Spray applied June 2.

A total of 625 gallons of diluted spray was applied with the mist blower to 370 trees or an average of 1.9 gallons of spray per tree. Average spraying time was about one minute per tree.

The sprayed trees were examined June 16 about two weeks after spraying. All materials such as the DDT, parathion, Marlate and Rhothane gave good control of cankerworm larvae, and small oak leaf miner larvae which were just beginning to show some damage at the time of the spraying. There was also no evidence of pin oak sawfly larvae feeding and no plant injury to the foliage from any of the sprays.

The trees at the Florham Farms were sprayed again in May, 1952. The following materials were used:

No. 1. May 22.. Two gallons of Chipman 60 per cent toxaphene emulsion were diluted to 125 gallons with water. Sprayed 84 trees with 90 to 95 gallons of spray. Spraying time about 70 minutes. The strainer in the spray line became clogged and only slightly more than one gallon of spray average was applied to the trees.

No. 2. Sprayed May 28. Five gallons of Halco Chemical Co.'s 25 per cent DDT emulsion (Mulso-rite) were diluted to 125 gallons with water giving a one per cent DDT emulsion spray. Sprayed 72 trees in 70 minutes averaging 1¾ gallons per tree and one minute spraying time per tree.

No. 3. Sprayed May 28. Diluted 12½ pounds of 50 per cent wettable malathion powder in 125 gallons of water. Sprayed 75 trees in 80 minutes spraying time. An average of about 1¾ gallons per tree and one minute spraying time per tree.

No. 4. Sprayed May 29. Halco Chemical Co.'s 75 per cent chlordane emulsion diluted 1½ gallons to 125 gallons with water. Sprayed 58 trees in

(Continued on Page 30)

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NAA NEWS

By PAUL E. TILFORD, *Secretary*
Box 426, Wooster, Ohio

Chlorosis In Shade Trees—A Possible New Treatment

Chlorosis, due to unavailability of iron, is fairly common in some species of shade trees, particularly in pin oak. The leaves take on a yellow cast due to a decrease in the amount of the green coloring matter, chlorophyll. Iron is essential for the formation of chlorophyll and when the necessary amount is not available, chlorophyll formation is limited and the leaves become chlorotic.

Chlorophyll is essential for photosynthesis which is the process of manufacturing food in plant leaves. When chlorophyll is absent or limited the chlorotic tree doesn't grow well. In severe cases of chlorosis, branches die and after a few years entire trees may be killed.

Iron chlorosis occurs more commonly on soils which are neutral or alkaline. Under such conditions iron in the soil becomes less available and even though it may be present in sufficient amounts, the tree is unable to get enough to meet its requirements for chlorophyll formation.

Treatments for iron chlorosis in shade trees up to the preesnt time have been only partially successful. Three different types of treatments have been made: 1. Injection, 2. Spraying, and 3. Soil Treatments.

Injection treatments consist of placing either solutions or the dry forms of iron compounds, such as ferric phosphate, ferrous sulfate or ferric citrate into holes bored in the trunks of trees. Such treatments often give some control but distribution of the iron throughout the tree may not be uniform and the leaves may "green-up" only on certain branches. Another undesirable feature of the injection treatment is the boring of holes in the trunk. This always creates a possible means for rot organisms to gain entrance to the wood of the tree.

Iron applied to the foliage of chlorotic trees is absorbed by the leaves and brings about a greening of the foliage. A solution of iron sulfate applied as a foliage spray has been used to a considerable extent as a seasonal control for chlorosis. The effect of foliage application of iron does not carry over to succeeding years. The value of this treatment has been largely as a temporary control until soil conditions could be altered by treatments aimed to give more permanent control.

Iron sulfate mixed with such acid-forming materials as aluminum sulfate, ammonium sulfate and sulfur applied to the soil in the same manner as fertilizer around chlorotic trees is a common treatment. The results obtained are variable. Sometimes control is complete and carries over a number of years. Then there are stubborn cases that are very slow to respond.

All three forms of treatment have been used successfully but all have disadvantages and limitations and a better treatment has been needed. There is now some evidence that such a treatment is available through the use of chelated iron.

At the Arborist's Day of the Ohio Short Course for Arborists, Landscape Gardeners and Nurserymen, January 17, Columbus, a panel discussed "The Use of Chelated Iron in Chlorosis Control." Dr. L. C. Chadwick, Department of Horticulture, Ohio State University, acted as panel leader. Summaries of the remarks of the panel members concerning their experiences with iron chelate are given in the following paragraphs.

J. R. Kuykendall, Geigy Agricultural Chemicals Research Laboratory, Bayonne, N. J., explained that chelated iron is a complex organic iron which remains available to plants under soil conditions that cause the ordinary forms of iron to become unavailable. This relativley new form of iron has proven beneficial in treating iron chlorosis of citrus, azalea, gardenia, rose, other ornamental and crop plants, and shade trees, where it has been tried.

H. N. Engledow, Midwestern Tree Experts, Indianapolis, Indiana, reported good results with Sequestrene NAFE (The Geigy Company's name for their chelated iron) when used as a soil treatment this past spring on a number of severely chlorotic pin oaks. The rate of application was 1 pound for each 4 inches of trunk diameter. The Sequestrene was put in solution in a spray tank and applied in the soil of the tree root area with a soil spear. Other trees were sprayed with a solution containing 2 pounds of Sequestrene NAFE and 5 pounds of NuGreen to 100 gallons of water. The spray method of application gave some results but was not equal to the soil application. Other trees on the street left untreated served as checks for comparison. They remained chlorotic throughout the summer, whereas, the treated trees, particularly those receiving the soil treatment, showed about normal dark green leaves and grew much better than during the past several seasons.

Theodore Parke, Parke-Speed Tree Service, Columbus, Ohio, reported on tests made in cooperation with Dr. Chadwick of Ohio State University. The results from soil treatment with the Sequestrene NAFE were similar to those obtained by Engledow under conditions of sufficient soil moisture for good growth. When the treatments were made under drought conditions the results were not so satisfactory.

E. A. Sanford, The William A. Natorp Co., Cincinnati, obtained good results from the soil treatment on both pin oak and sweet gum. Some trees treated two years ago continued to show the benefits from the treatment through the second year. It is expected that a single soil treatment will be effective for several years except in soils which are very alkaline.

The results obtained in these tests in three different locations are very encouraging. It would seem that wherever chlorosis occurs in trees it would be advisable to test iron chelate as a treatment. Iron compounds of this nature are being marketed by several companies dealing in agricultural chemicals.

Midwestern Shade Tree Conference

The 10th annual meeting of the Midwestern Chapter of the National Shade Tree Conference will be held February 23-24-25, 1955, in the Chase Hotel, St. Louis, Missouri. The purpose of the organization is to encourage the planting of more trees and ornamental shrubs, to raise the standards of tree care practices by dissemination of knowledge gained through laboratory research and field work and to promote more friendly cooperation among those engaged in arboriculture. Membership is composed of commercial arborists, city foresters, park personnel, nurserymen, educators, research scientists and others interested in the propagation and care of trees and shrubs.

The convention is open to all who wish to attend. Registration of delegates will start at 8:30 a.m., Wednesday, February 23, and the first paper on the educational program will be presented at 11:00 a.m. An attendance of approximately 300 members and guests is expected.

The program is primarily directed to

discussion of problems of concern to those who perform tree work in the midwest, but included also are topics of interest to arborists from all sections of the country. Following presentation of each paper there will be a period for discussion and questions. Additional opportunity for questions and discussion will be provided in the Plant Clinic session which will be held Friday morning. Various tools and supplies used in arboricultural work will be on display in the Chase Hotel throughout the convention, with representatives on hand to explain their uses. A special program has been arranged for the ladies.

Included on the educational program are the following topics and speakers:

Correlating Planting To Modern Architecture, by Stuart M. Mertz, Landscape Architect, Clayton, Missouri; *Ethical Practice Is Good Business,* by Leslie Prichard, Advertising Censor and Research Director, St. Louis Post-Dispatch, St. Louis, Missouri; *Tree Diseases In The Midwest,* by Dr. T. W. Bretz, Professor of Forestry, University of Missouri, Columbia, Missouri; *Trace Elements and Their Effect On Plant Life,* by Dr. E. R. Spencer, Consulting Botanist and Plant Pathologist, Lebanon, Illinois; *Damage To Shade Trees From Construction Operations,* by Gerrit A. Visser, Shield Shade Tree Specialists, Clayton, Missouri; *Concentration and Timing of Antibiotic Sprays For Control of Fire Blight,* by Dr. Robert N. Goodman, Professor of Horticulture, University of Missouri, Columbia, Missouri; *Weather Effects On Tree Growth,* by August P. Beilmann, Manager of The Arboretum, Missouri Botanical Garden, Gray Summit, Missouri; *Dutch Elm Disease and Elm Phloem Necrosis,* a film presented by Ernie Herrbach, Horticulturist, Standard Oil Company, Chicago, Illinois.

PRATT'S Sprays

Pratt's Sprays are formulated for use in mist or hydraulic sprayers to give the greatest degree of safety and effectiveness for shade trees and evergreens.

PRATT'S SUMMER SPRA-OIL—A miscible 97% white oil type summer oil. For use in the control of red spider, scale crawlers, white fly and as an effective ovicide, also used as a dormant spray for evergreens where a lighter oil is desired.

D-X INSECT SPRAY—One of the most effective non-poisonous sprays for sucking and chewing insects of shade trees as well as fruit trees. Contains rotenone, pyrethrum and piperonyl cyclonene for great effectiveness and safety.

PRATT'S DDT SPRAYS—Pratt's DDT sprays are especially formulated for the safety and effectiveness demanded in shade tree work. Pratt's Emulsifiable 25% DDT —Pratt's S-30% DDT and Pratt's dry wettable 50% DDT.

SCALECIDE—The oldest and best known dormant oil spray. Contains 96% highly refined, highly paraffinic dewaxed oil. Use Scalecide for the control of scale, aphis, red mite, and over-wintering insects on shade trees, fruit trees, evergreens and ornamentals.

Order Pratt's Sprays from your distributor. Bulletins available — Pratt's Oil Sprays, Pratt's Sprays for Mist Blowers and Hydraulic Spraying.

★

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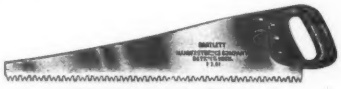
204 Twenty-first Ave., Paterson, N. J.

USE BARTLETT SAWS

Here is what one of our customers writes regarding Bartlett No. 124B SPECIAL SAW

". . . . Fast, easy cutting, easily sharpened . . . Stands up longer after sharpening than any saw I ever used . . ."



No. 41 Tuttle Tooth

This popular saw is made in 20 and 24-inch lengths. Equipped with a special extra-large handle. Tuttle tooth design is excellent for large cuts.

No. 124B Special Utility

Our exclusive design provides big, husky cutting teeth with 4 points per inch. Fast cuttings and easily sharpened. No. 124B has 24-inch blade. If 26-inch blade is preferred, specify No. 114BD.

No. 27 Tree Expert's

Widely used for many years by arborists, the No. 27 26-inch has 6 points per inch, beveled forward. Also made in 28-inch length known as our No. 28.

No. 114B Special Utility

No. 114B is 26 inches long and offers same exclusive design as No. 124B except for handle. Fast cutting, easily sharpened.

No. 170 Forester's

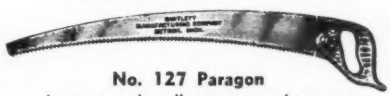
Extra-large peg teeth, 4½ points per inch, and an unusually stiff blade make this 26-inch saw suitable for heavy cutting.

No. 114 Rapid Cut

Similar to No. 114B except that every third tooth is a well formed raker. Gullets are especially deep to provide quick clearance. Also furnished in 24-inch length, known as No. 124 Rapid Cut.

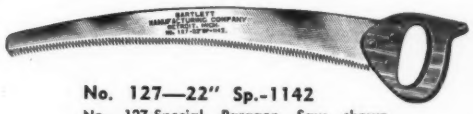
Leather Saw Sheaths

As a safety and convenience factor for the operator, as well as protection for the saw, Leather Sheats are available for all of our pruning saws.



No. 127 Paragon

A very popular all-purpose pruning saw, No. 127 is available in 18, 22, 24 and 26-inch lengths. Shown above.



No. 127—22" Sp.-1142

No. 127-Special Paragon Saw shown above has needle point teeth ¼" deep 6 points per inch.

Free on request—Catalog No. 35 listing our complete line of Tree Trimming Tools and Tree Surgery Supplies

BARTLETT MANUFACTURING CO.

3028 East Grand Blvd., Detroit 2, Mich.

Arbor Day

(Continued from Page 19)

date in an "early" spring, has never been fully explained.

"Arbor Day" as such, in the various states of the union may occur at present on various dates from December to May, if not over a longer period. Tree planting, like the planting of any other material is a seasonal job, of course. But few people, with the possible exception of a few thousand school pupils throughout the country, actually engage in tree planting on that day. The purpose of a nation-wide Arbor Day is to cause people of all ages to consider the values and benefits of trees at least once during the year, hence the arbitrary date.

That the value of trees is appreciated in a fast-moving era is borne out by the fact, for instance, that three Honey Locusts some 12 to 15 inches in caliper have just been planted on the Fifth Avenue side of the Manufacturers Trust Co., a new modernistic building of interest at the corner of 43rd Street, in New York City.

Natural camouflage in the event of war, is provided, especially by the roadside trees. Trees are no longer being taken for granted as many insurance companies will no doubt agree, since recent devastation as that caused by hurricane Hazel.

At the annual meeting of the National Shade Tree Conference, in Atlantic City, a very comprehensive paper was read by Mr. Harold Palmer Piser, entitled "The Place and Purpose of an Arbor Day Association." Mr. Piser has not only made a study of the biography of J. Sterling Morton, the founder of Arbor Day, but from the standpoint of a self-styled "layman" has pointed out the "cultural, aesthetic, recreational and economic value" of trees. To him it has seemed advisable that an independent organization should be formed to promote the idea. Copies of this paper are available.

Comment from the floor of the convention was, first, to the effect that it was believed that the movement could be handled within their organization. Another view was that it needed more concerted effort than that usually given by a group with so many diversified interests.

The purpose of a National Arbor Day, of course, is to have a day set aside for nationwide publicity so that young and old may become more conscious of the importance of trees in particular and other plants in general.

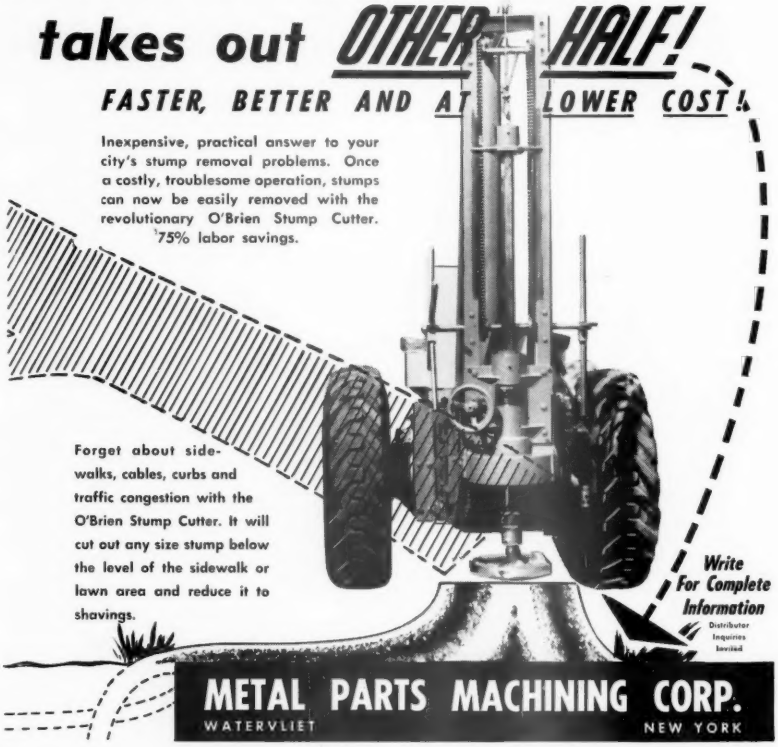
Trees...

O'BRIEN STUMP CUTTER

takes out OTHER HALF!

FASTER, BETTER AND AT LOWER COST!

Inexpensive, practical answer to your city's stump removal problems. Once a costly, troublesome operation, stumps can now be easily removed with the revolutionary O'Brien Stump Cutter. 75% labor savings.



Forget about sidewalks, cables, curbs and traffic congestion with the O'Brien Stump Cutter. It will cut out any size stump below the level of the sidewalk or lawn area and reduce it to shavings.

Write For Complete Information

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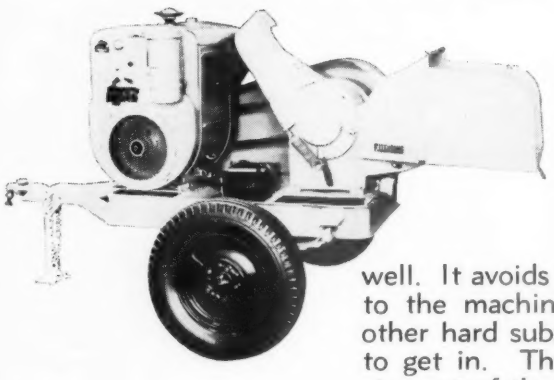
WATERVLIET NEW YORK

THE FITCHBURG CHIPPER



with its patented spring tension feed, assures smoother feeding, not just of smaller brush, but larger as well. It avoids serious damage to the machine if metals or other hard substances happen to get in. They are built to stay out of the repair shop.

"We should like to let you use one for a day or so to see how well they perform."

Karl Kuemmerling, Inc.

P. O. Box 248 Canton, Ohio

THIRTY-FIRST NATIONAL SHADE TREE CONFERENCE

Santa Barbara, California——August 1-5, 1955

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LADIES PROGRAM
Mrs. J. S. Harris, *Chairman*
Assisted by the ladies of the Western Chapter

Special Car To Santa Barbara

Some of those who attend the Conference at Santa Barbara next August, perhaps will go by train. A recent inquiry made by Noel Wysong furnishes the following information on train travel to the Conference from Chicago.

1. A "Special Car" from Chicago to Santa Barbara and return to Chicago.

2. Leave Chicago Wednesday, July 27; arrive Grand Canyon National Park Friday morning and spend Friday in the Park; arrive Los Angeles Saturday morning. Visit San Diego either Saturday or Sunday, and arrive in Santa Barbara Monday morning (or Sunday, if the San Diego trip is made Saturday). The side trip to Grand Canyon National Park would cost $8.25 extra; the trip to San Diego would be made without any charge.

3. The route and the R. R. trains would be as follows: Santa Fe R. R. from Chicago to Los Angeles by way of Kansas City; Hutchinson, Kansas; La Junta, Colorado; Albuquerque, N. M., Flagstaff, Ariz.; Grand Canyon side trip; Los Angeles; San Diego side trip; the Southern Pacific R. R. from Los Angeles to San Francisco, with the stop-over in Santa Barbara for the Conference; the Western Pacific R. R. from San Francisco to Salt Lake City, via the Feather River Canyon; the Denver and Rio Grande Western R. R. from Salt Lake City to Denver, Colo., by way of Grand Junction and Dotsero; the Burlington R. R. from Denver to Chicago by way of Culbertson, Hastings, Lincoln and Omaha, Nebraska.

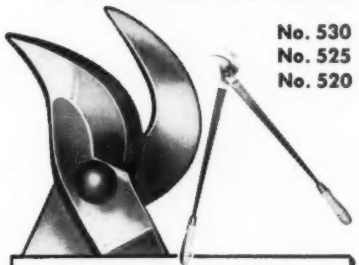
4. From Chicago to Los Angeles and San Francisco the car, or cars, would be the standard passenger type; from San Francisco to Chicago, on the return trip, the train would carry dome observatory cars.

5. The round trip fare, either on a "Special" car or simply first-class ticket, on the route outlined would be $199.05. This includes the Grand Canyon National Park side trip, the San Diego side trip, lower berth pullman from Chicago to Santa Barbara and return; all taxes are included.

(Turn Page)

NEW SEYMOUR SMITH TIFFANY PRUNER

Now two great names combine in the world's finest long handled pruner.



No. 530
No. 525
No. 520

The **TIFFANY** double cut, efficient "draw-in" cutting action and 100% hammer forged alloy steel parts **PLUS** the ***Seymour Smith*** improved bolt and nut joint, through handle and riveted grip fastening and thinner cutting edges.

3 SIZES: 30" ($6.25) 25" ($5.95) 20" ($5.75)

"TELEPHONE" TREE PRUNERS

Reinforced malleable iron head. Tempered steel blade. Compression coil spring. Spruce poles with telescoping ferrule joints. Cable chain works through ball bearing pulley. Cuts up to 1".

No. 11-18, Complete pruner with rope and 18 foot pole $16.25
No. 11 (Pruner Head only)..... $4.40
Prices for No. 12 Head (for 1½" cutting) and extensions on request.

PROFESSIONAL PRUNER

No. 124 8" $3.50 No. 125 9" $4.00

The standard "Double-Cut" pruner for the expert. Also, the finest of them all, No. 90, 8". $5.50

NEW, FINEST EVER
PRUNING SAWS

No. 922 22" blade $4.85

No. 514 14" blade $2.95

A new Seymour Smith development, with blades of finest Swedish steel. Fastest, easiest cutters on the market. Complete line of 6 models covering all requirements up to chain saw work.

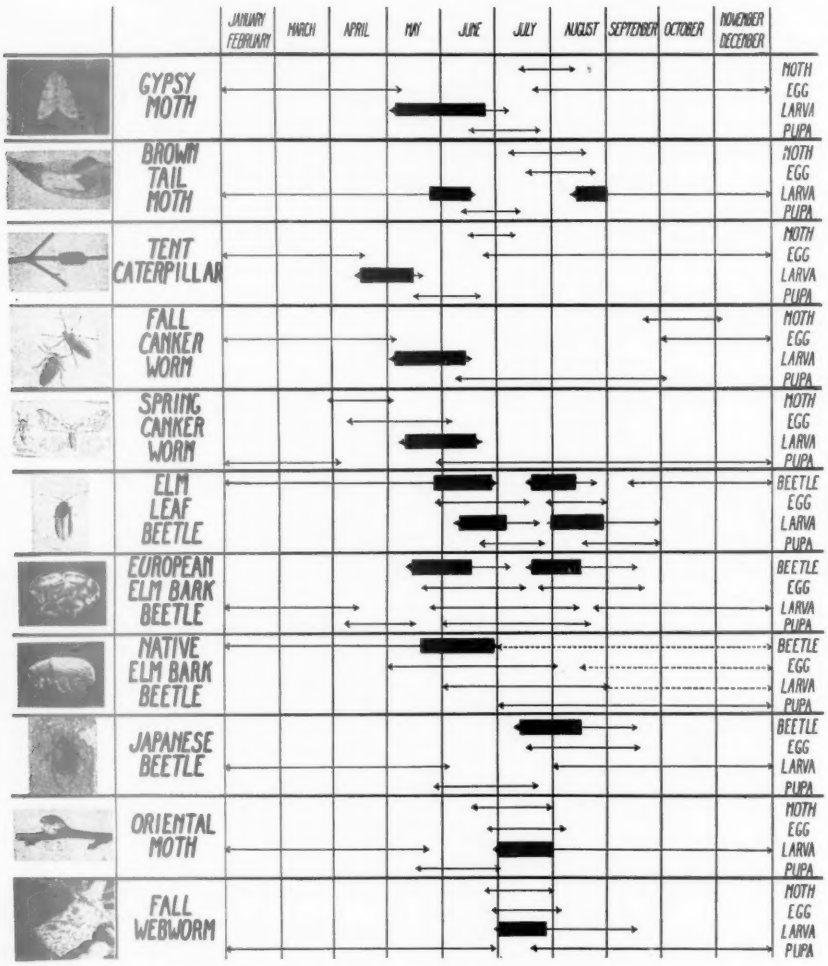
SEYMOUR SMITH
OUR 105th YEAR
The Line of Quality

Prices slightly higher Denver and West

See your dealer — or write for free, descriptive literature.

SEYMOUR SMITH & SON, INC.
4602 Main St., Oakville, Conn.

Destructive Period In Life History of Shade Tree Insects



When you see RED (BLACK in the cut) on the chart, the bugs are eating. Sometimes it is caterpillars — other times it's beetles. The column on the right tells which.

You should SPRAY AT THE BEGINNING of the RED period. But the RED periods do not all begin at the same time, and you probably cannot spray eleven times.

If you are not color blind, you should see eight RED bands in May and eight in June. Therefore, SPRAYING SHOULD BEGIN ABOUT MAY 15 and FINISH IN EARLY JUNE. If it should rain too hard and long, you should repeat what you have done.

Another group of RED bands is shown in July and August. MORE SPRAYING ABOUT JULY 15 should finish off the job.

If you are after a special one of these eleven bugs, hit him at the very beginning of his RED activities.

Courtesy; Massachusetts Tree Wardens and Foresters Ass'n. Prepared by; W. D. Whitcomb and C. S. Hood. University of Massachusetts.

6. Family travel rates would be in effect; that is, the husband would pay $199.05 for a round trip ticket, but a ticket for his wife would cost approximately $150.00; a ticket for a child between the ages of 12 and 22 would cost approximately $150.

7. Lower berth, Pullman (included in the cost outlined above) for the round trip would be $51.70; for a Roomette (1 person), $72.38; for a Double Bedroom (2 persons), $113.69; for a Compartment (4 persons), $146.03; and for a Drawing Room (5 persons), $196.46.

8. Meals are not included in the prices quoted.

9. The R. R. Company would like to have at least 18 First Class tickets to reserve a Special Car for us; Mr. Talbot said, however, that the Company would not insist on any minimum number of tickets provided we would not object to the vacant seats being sold to passengers other than those in our group.

10. The R. R. Company must be notified at least 30 days in advance if a Special Car is desired. Tickets may be purchased directly from any Santa Fe R. R. ticket office. Those living east of Chicago could buy a round trip ticket scheduling their itinerary to meet the Special Car in Chicago; those living west of Chicago could pick up the Special Car at any point en route; for example, those who live in St. Louis could meet the Special Car in Kansas City.

This will be called to your attention again later in the year and if interested in making the trip as outlined, you will need to request reservations not later than July 1. Be thinking about it.

Announce New Clearing Attachment

The Homelite Corporation announces a new, low-cost attachment that converts the Homelite Model 17 Chain Saw into an *all-purpose* clearing unit.

Exclusive with Homelite, the new Clearing Attachment is said to be ideal for farms and estates, land clearing contractors, county road crews, pipe line companies, railroads and utilities, park and forestry departments. Simple to operate by anyone, the rugged power and amazing versatility of this new Clearing Attachment permits one man to do the work of a whole gang of men using saws and axes.

According to the company's field reports, "On job after job, records prove that *one man* with this Homelite Attachment keeps three men busy clearing up limbs and piling brush. "In most cases," the company states, "you can save enough money on the very first day to pay for the attachment!"

Designed for faster, easier, more profitable clearing, the new Attachment

eliminates stoop and squat in felling; lets you reach out to the limb without having to go underneath; takes the backache out of bucking and under-bucking. Jaw-

grip spike permits plunge-bucking of logs right on the ground. Spike bites into the dirt, keeps chain up out of the dirt; spike takes thrust of the chain, prevents logs from rolling or spinning away.

For complete information on this new Clearing Attachment, write: Homelite Corporation, 48 Riverdale Avenue, Port Chester, New York.

Makes LAWNS sit up and sing!

One-shot treatment kills the soil pests that destroy grass roots

Stop the ravages of white grubs, ants and chinchbugs . . . let your lawn become the lush green carpet you dream of! Dieldrin rids it of these and other ruinous pests.

Easy to use! Sprinkle dieldrin granules on lawn and soak into soil with hose or sprinkler. That's all!

It lasts! One treatment lasts for years in most areas. Dieldrin is distributed by hardware and garden supply stores under various brand names. Just ask for dieldrin.

dieldrin (say deel-drin)

SHELL CHEMICAL CORPORATION

Your job's a lot easier when you USE STANDARD SPRAYS

TO PROTECT AND IMPROVE TREES, SHRUBS AND ORNAMENTALS, GREENHOUSE AND GARDEN PLANTS, LAWNS!

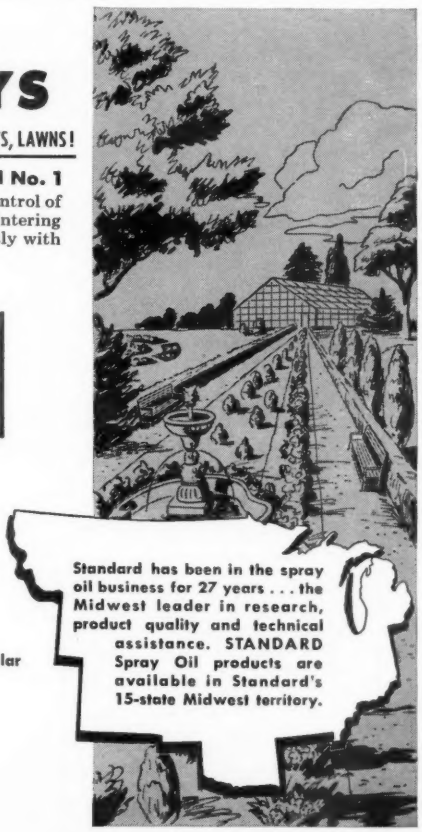
STANDARD Elm Spray Destroys the insect carriers of elm phloem necrosis and Dutch elm disease. It is also valuable for control of many defoliating insects and scale crawlers.

STANDARD Dormant Spray Oil No. 1 (formerly DENDROL) For effective control of scale insects. Destroys the over-wintering forms of these pests. Mixes instantly with water.

SPRAY AWAY BRUSH WITH

STANDARD Brush Killer Effective against oak, hickory, elm, osage orange, brambles, poison ivy, poison oak, hawthorn and many others.

OTHER STANDARD PRODUCTS INCLUDE: STANDARD 25% DDT Concentrate . . . STANDARD Summer Emulsion Concentrate (formerly VERDOL) . . . STANDARD Garden Dust . . . STANDARD 2,4-D Weed Killer No. 2 . . . STANDARD Crabgrass Spray.



Standard has been in the spray oil business for 27 years . . . the Midwest leader in research, product quality and technical assistance. STANDARD Spray Oil products are available in Standard's 15-state Midwest territory.

For more information on all STANDARD Products as they pertain to your particular pest control problem, write: STANDARD OIL COMPANY (Indiana) 910 South Michigan Avenue, Chicago 80, Illinois

You expect more from STANDARD and get it!

Authors and Books

The following books may be ordered from TREES Magazine, 7621 Lewis Road, Olmsted Falls, Ohio.

CONSERVING NATURAL RESOURCES by Shirley W. Allen. McGraw-Hill Book Co., Inc., 330 W. 42nd St. New York 36, N. Y. 347 pgs. Illus. $5.50

This volume covers the entire field of natural resources, including minerals, and discusses the nature of each group of resources and its significance in the individual and national economy. The practices which lead to the depletion of our national resources and those which foster their fair distribution and conservation are analyzed. Throughout the book the interrelationships of the various resources and their management are pointed out, and both the techniques of conservation and the social and economic aspects of conservation are treated. The final natural resource to which the author turns his attention is that of human power.

Modern methods and techniques (for example, the use of the airplane in spraying insecticides and the use of the seismograph in exploring for minerals) and their effects on conservation are discussed. The author also treats many modern phenomena, such as synthetics and smog, and their relation to natural resources. He discusses, too, the competition between industry, transportation, residence, and testing agencies for land. The problems of government with respect to utilization and conservation of natural resources are also covered. All the important conservation laws and their successes and failures are mentioned.

This is an important contribution because it encompasses all the relevant aspects of the subject—physical, technical, legal, political, economic, social and human; and it is extermely well illustrated with halftones, charts, maps, and graphs.

The PRUNING MANUAL, by Everett P. Christopher. The MacMillan Co., 60 Fifth Ave., New York 11. 320 pgs. Illus. $5.

For more than half a century, *The Pruning-Manual* by Liberty Hyde Bailey has been the definitive reference in its field. This new book, its direct successor, continues the Bailey tradition in providing the most comprehensive and up-to-date information available on pruning.

Specific instructions are given for the pruning of all temperate-zone fruits, shade trees, and ornamental shrubs, including roses. Sections are devoted also to forestry, grafting, root-pruning, wound treatment, and tools. Throughout the book the basic reason for each pruning practice is given, primarily through an explanation of plant anatomy and physiology.

Every direction can be easily followed by even the unpracticed person. Yet the thoroughness and authority with which Dr. Christopher writes give the book basic value for professional and student use.

The book is illustrated with nearly 100 diagrams and photographs.

TREES AND SHRUBS IN EASTERN NORTH AMERICA, by Benjamin Blackburn. Oxford University Press, New York N. Y. 114 Fifth Ave. 358 pgs. Illus. $6.00.

For nearly four centuries man has been bringing plants from other parts of the world to eastern North America, and these exotics have been combined with our native plants, making up one of the most diversified and richest temperate-zone floras in the world. The layman who has long wanted a handy and accurate means of identification to the plants he sees arround him will find these keys to the wild and cultivated woody plants growing outdoors in eastern North America an infallible and easy-to-understand guide.

The keys, which are a series of tabulations describing the most easily noted traits of leaves and branclets, consist of short descriptive statements arranged in pairs. The statement applying to the plant in question is selected and one continues to the next couplet. A series of these couplets is followed until one arrives at the name of the plant. Detailed explanation of the use of the keys is included in the book. Of further aid to identification are the eight linecut drawings.

Scientific names follow the *Bibliography of Cultivated Trees and Shrubs*, by Alfred Rehder. Common names of plants are given in all cases where suitable ones can be designated; some new names are suggested mostly for oriental plants, and the origin of each plant is given. Somewhat more than 2,300 species and variations of woody plants exclusive of conifers are included.

The general keys are organized as follows: Plants with Scale-like, Needle-like, or Linear Leaves; Plants with Opposite or Whorled Simple Leaves; Plants with Opposite or Whorled Compound Leaves; Plants with Alternate Simple Leaves; and Plants with Alternate Compound Leaves.

Mist Blower

(Continued from Page 22)

one hour spraying time. Approximately two gallons per tree and one minute spraying time per tree.

No. 5. Sprayed May 29. 3/5 of a gallon of Pittsburg Chemical Co.'s metacide, 33.4 per cent active, diluted in 50 gallons of water. Twenty-four trees were sprayed in 30 minutes of spraying time.

A total of 313 trees were sprayed with 515 gallons of diluted spray in 310 minutes (five hours and ten minutes). This gave an average of 1⅔ gallons of spray per tree applied in an average time of one minute per tree. These trees were all large and varied with a few trees about 45 to 50 feet tall and most of them between 50 and 60 feet and a few as tall as 70 or 75 feet. Previous sprays had cleaned up most of the insect problems. Some few oak leafrollers were present but were not bad. No evidence of foliage injury was found from using any of the spray materials.

HELLER-GRO

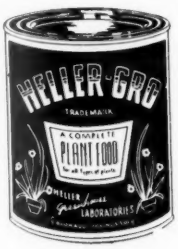
REG. U. S. PAT. OFF.

COMPLETE PLANT FOOD

THE SURE ANSWER

Many Shade Tree Members have found that HELLER-GRO produces best results in both foliar and jet feeding of trees, and that it develops strong, deep-rooted turf of richest color. HELLER-GRO is NOT a "shot in the arm," but a complete balanced food which brings prolonged growth response, yet improves color quickly.

This highly concentrated paste is completely and quickly soluble. The solution positively will not burn. Made from USP grade chemicals only, it is a high grade product which can be depended on. TRY IT!



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Newtown Square, Pennsylvania

TAILORED TREES FOR SPRING

The Planning and Management of Public Trees

IS A SCIENCE

Not Just Any Old Tree Will Do: Only The Correct One Will Fit The Space

Pauls Scarlet Hawthorn in Full Bloom—Note the pleasing relationship, conflict free, between the trunk, sidewalk and treelawn—plus the trees' exquisite scarlet beauty.

Keynote Your Planting Around These Superb Small Low Maintenance "Tailored Trees"

American Hophornbeam, 8 to 10 ft.; Pauls Scarlet Hawthorn, 8 to 10 ft.; Double White English Hawthorn, 8 to 10 ft.; Lavalle Hawthorn, 8 to 10 ft.; Washington Hawthorn, 6 to 8 ft.; Idaho Locust, 6 to 8 ft.; Globe Locust, 7 ft. stems; Globe Norway, 7 ft. stems; Uprite Norway, 6 to 8 ft.; "Cleveland" Norway, 5 to 7 ft.; "Irish" Norway, 5 to 7 ft.; Buisman Elm, (DED resistant); Zelkova serrata (DED resistant); Bowhall (pyramidal) Red Maple, 5 to 7 ft.; Armstrong (columnar) Red Maple, 6 to 8 ft.; Kwanzan Cherry, 6 ft. stems; Fruitless Mulberry—and many others.

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DOW

BASAL BARK TREATMENT IS AN IMPORTANT TOOL FOR RIGHT-OF-WAY MAINTENANCE

Fresh-cut stumps may be treated any month in the year. No troublesome sprouts and suckers will appear—provided the entire stump area, including bark, cut surface and all exposed roots, has been thoroughly drenched with the spray.

Basal bark treatment requires all-around coverage of the basal area from the ground line upward 15 inches. Wet thoroughly until run-down or run-off is apparent. This method controls small brush and scrub trees in any season.

Spraying with Dow brush killers controls trees and brush at low cost... results are long-lasting

Basal bark treatment of brush and trees fills an important place in a year-around brush control program. Effective during any month in the year, this practice is useful in the growing season as a follow-up to foliage treatment to control resistant species and to take care of "misses"and new growths. In other seasons—even during the winter months—application of Esteron® Brush Killer or Esteron 245 in oil to the trunk base of standing trees or to axe frills made in the bark gives long-lasting results. Regrowth is reduced to a minimum. Frill application is economical on large, thick-barked trees—basal bark spraying on younger, smaller ones and on brush. Both methods have proved effective over a wide range of woody species in all sections of the country in all seasons. Spraying cut stumps to prevent resprouting may also be done at any time of the year.

Esteron Brush Killer combines the action of powerful, low-volatility esters of 2,4-D and 2,4,5-T. Esteron 245 contains this type ester of 2,4,5-T only. Ask your supplier how these excellent Dow products can give you positive brush control at low cost. Or write THE DOW CHEMICAL COMPANY, Agricultural Chemical Sales Department, Midland, Michigan. In Canada: Dow Chemical of Canada, Limited, Toronto, Canada.

you can depend on DOW AGRICULTURAL CHEMICALS

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